

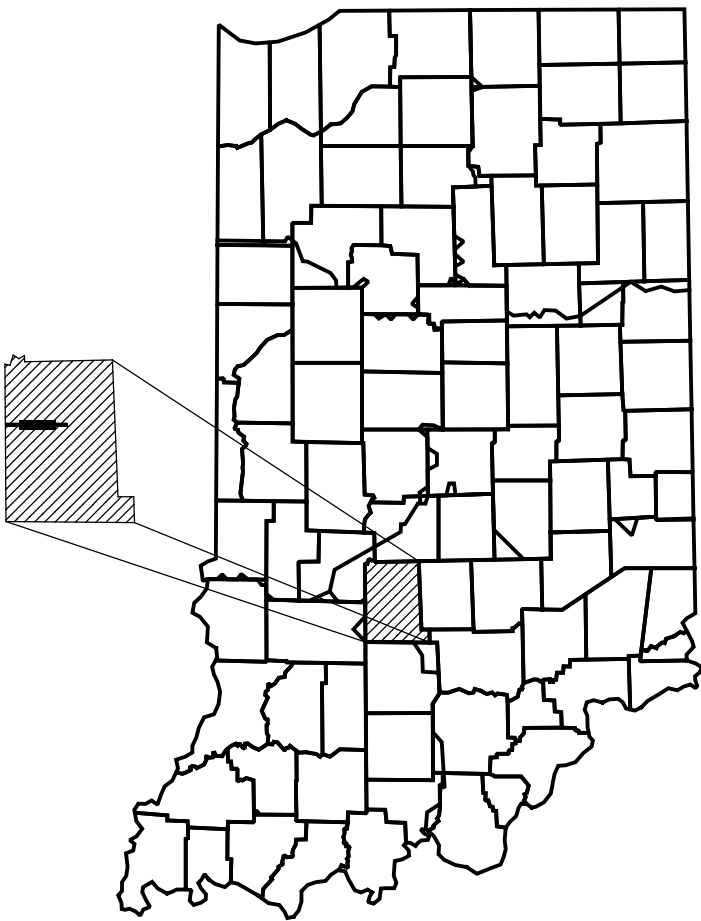
CITY OF BLOOMINGTON UTILITIES



UTILITY PLANS

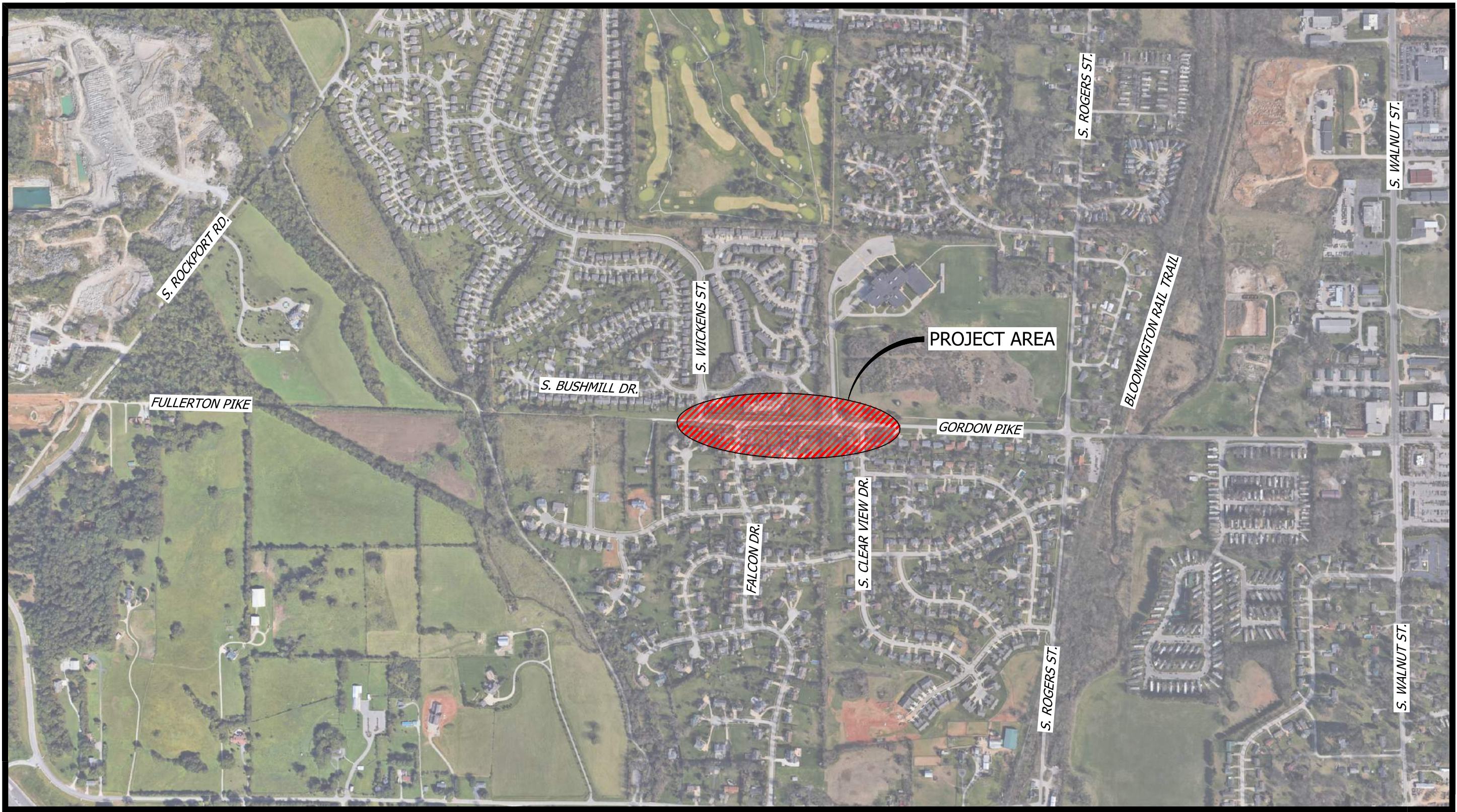
FULLERTON PIKE - PHASE III WATER MAIN RELOCATION

PROJECT NO. 2021.00628



PROJECT LOCATION SHOWN BY

LATITUDE: 39° 07' 19" N LONGITUDE: 86° 33' 05" W



Kaitlyn Currie 2/10/2023
Kaitlyn M. Currie
Professional Engineer No. PE11800774
State of Indiana

MONROE COUNTY



9025 RIVER ROAD, SUITE 200
INDIANAPOLIS, IN 46240
TEL 317.547.5580 FAX 317.543.0270
www.structurepoint.com

		BRIDGE FILE	
		N/A	
		DESIGNATION	
		N/A	
		SHEETS	
SURVEY BOOK		1	of 13
CONTRACT		PROJECT	
N/A		2021.00628	

UTILITIES		
COMMUNICATIONS AT&T 4517 E. Indiana Bell Ct. Bloomington, IN 47408 (812) 334-4718 Contact: James Owens CABLE TV Comcast Cable 1600 W. Vernal Pike Bloomington, IN 47404 (812) 360-3090 Contact: Steve McArtor GAS Vectren - Transmission 1 N. Main St. Evansville, IN 47702 (812) 431-5670 Contact: Jeff Donnelly Vectren - Distribution 1800 W. 26th St. Cowan And Hines Rd. Muncie, IN 47302 (765) 287-2119 Contact: Jon Eastham	SEWER & WATER City of Bloomington 600 E. Miller Dr. Bloomington, IN 47402 (812) 349-3631 Contact: Jane Fleig TELEPHONE Smithville Communications Inc. 1600 W. Temperance St. Ellettsville, IN 47429 (317) 935-4457 Contact: Eric Tamewitz	ELECTRIC Duke Energy - Distribution 2727 Central Ave. Columbus, IN 47201 (812) 375-2111 Contact: Jared Dickey Duke Energy - Transmission 1000 E. Main St. Plainfield, IN 46168 (317) 838-1053 Contact: Zach Boston
Indiana 811 Know what's below. 811 before you dig.		

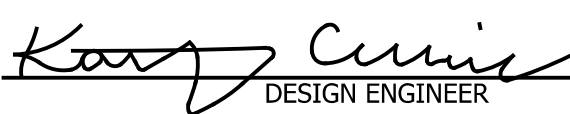
GENERAL NOTES	
1.	ALL WORK SHALL BE PERFORMED IN ACCORDANCE WITH THE PLANS AND SPECIFICATIONS FOR THIS PROJECT. ADDITIONS, DELETIONS, AND/OR REVISIONS TO THE FACILITIES SHALL NOT BE MADE WITHOUT PRIOR APPROVAL BY THE ENGINEER. THE CONTRACTOR SHALL KEEP AND MAINTAIN IN GOOD CONDITION A COMPLETE SET OF THE PROJECT PLANS AND SPECIFICATIONS ON THE JOB SITE AT ALL TIMES.
2.	CONTRACTOR SHALL COMPLY WITH ALL LOCAL, STATE, AND FEDERAL CODES, ORDINANCES, RULES, REGULATIONS, ORDERS, AND OTHER LEGAL REQUIREMENTS OF MUNICIPAL AUTHORITIES WHICH BEAR ON THE PERFORMANCE OF THE WORK.
3.	IN THE EVENT THAT THE CONTRACTOR DISCOVERS A DISCREPANCY ON THE CONSTRUCTION PLANS OR A POTENTIAL UTILITY CONFLICT, THEY SHALL CONTACT THE ENGINEER IMMEDIATELY FOR CLARIFICATION PRIOR TO PROCEEDING WITH CONSTRUCTION OF THE PORTION IN QUESTION.
4.	CONSTRUCTION SHALL NOT COMMENCE UNTIL ALL NECESSARY PERMITS HAVE BEEN OBTAINED.
5.	THE USE OF EXPLOSIVES FOR "ROCK REMOVAL" IS PROHIBITED UNLESS OTHERWISE AUTHORIZED IN WRITING.
6.	SITE TO BE RESTORED PER APPLICABLE CITY OF BLOOMINGTON AND INDOT STANDARDS.
7.	THE USE OF "ABANDONMENT" OR "REMOVAL" SHALL BE INTERCHANGEABLE AND IT SHALL BE UP TO THE CONTRACTOR TO DETERMINE IF ABANDONMENT OR REMOVAL IS REQUIRED TO PROPERLY COMPLETE WORK.
8.	ALL TEMPORARY ROAD REPAIR SEGMENTS TO BE REPAIRED WITH TEMPORARY ASPHALT PATCHING. MAINTENANCE OF THE TEMPORARY PATCH SHALL BE THE CONTRACTOR'S RESPONSIBILITY UNTIL ROAD CONSTRUCTION WORK BEGINS, REGARDLESS OF WHETHER THE WATER MAIN RELOCATION PROJECT HAS BEEN COMPLETED.
9.	ALL RESTRAINED JOINT LENGTHS SHOWN FOR EXISTING WATER MAINS ARE BASED ON AN OPERATING PRESSURE OF 95 PSI, NON-POLYWRAPPED DUCTILE IRON PIPE. CONTRACTOR SHALL CONTACT THE ENGINEER IF THERE ARE ANY VARIATIONS OF THESE ASSUMPTIONS FOR UPDATED RESTRAINED JOINT LENGTHS.
10.	ALL RESTRAINED JOINT LENGTHS SHOWN FOR PROPOSED WATER MAINS ARE BASED ON A TEST PRESSURE OF 200 PSI AND GRANULAR BEDDING AND BACKFILL. CONTRACTOR SHALL CONTACT THE ENGINEER IF THERE ARE ANY VARIATIONS OF THESE ASSUMPTIONS FOR UPDATED RESTRAINED JOINT LENGTHS.
11.	CONTRACTOR TO INSTALL ALL VALVE BOXES SUCH THAT THEY CAN BE ADJUSTED TO FINAL GRADE BY THE OWNER AT A LATER DATE. WHERE FILL IS PROPOSED TO OCCUR, CONTRACTOR SHALL INSTALL BOXES TO EXISTING GRADE SUCH THAT RISERS CAN BE ADDED AT A LATER DATE TO BRING TO PROPOSED GRADE. WHERE CUT IS PROPOSED TO OCCUR, CONTRACTOR SHALL INSTALL BOXES TO PROPOSED GRADE THEN ADD VALVE BOX RISERS TO BRING TO EXISTING GRADE AS A TEMPORARY MEASURE.
12.	CONTRACTOR TO SUBMIT A PROPOSED SEQUENCE OF CONSTRUCTION FOR REVIEW AND APPROVAL BY CITY OF BLOOMINGTON UTILITIES PRIOR TO THE START OF WORK.
13.	ALL DRIVEWAY REPAIR SEGMENTS TO BE REPAIRED WITH THE SAME MATERIAL AS THE EXISTING DRIVEWAY.
14.	CONTRACTOR SHALL PROVIDE A MINIMUM OF 3 DAYS NOTICE TO THE CITY OF BLOOMINGTON UTILITIES WHEN A LINE STOP IS REQUIRED TO BE INSTALLED OR REMOVED. CONTRACTOR SHALL PROVIDE ALL MATERIALS AND COMPLETE LINE STOP PREPARATION WORK INCLUDING EXCAVATION, INSTALLATION OF SADDLE, INSTALLATION OF CONCRETE THRUST RESTRAINT, INSTALLATION OF JOINT RESTRAINTS, ETC., ONCE ALL PREPARATION WORK IS COMPLETE, THE CITY OF BLOOMINGTON UTILITIES WILL INSTALL THE LINE STOP. CONTRACTOR WILL EXPEDITIOUSLY COMPLETE THEIR WORK AND NOTIFY THE CITY OF BLOOMINGTON UTILITIES TO INSERT THE CONTRACTOR SUPPLIED COMPLETION PLUG AND REMOVE THE LINE STOP.

INDEX	
SHEET NO.	DRAWING INDEX
1	TITLE SHEET
2	INDEX AND GENERAL NOTES
3	GENERAL LAYOUT PLAN
4	TRAFFIC PLAN
5 - 7	PLAN AND PROFILE - WATER MAIN - LINE "W1"
8	PLAN AND PROFILE - WATER MAIN - LINE "W2", "W3", "W4"
9	RESTORATION PLAN
10	STANDARD DETAILS - WATER MAIN
11	STANDARD DETAILS
12 - 13	STANDARD DETAILS - EROSION CONTROL

EXISTING LEGEND			
	BORING LOCATION		POLE, POWER
	CONTROL POINT / BENCHMARK		POLE, LIGHT
	DOWN SPOUT		SANITARY SEWER MANHOLE
	DRAINAGE INLET		SIGN
	DRAINAGE CATCH BASIN		TELEPHONE CONTROLLER CABINET
	DRAINAGE MANHOLE		TELEPHONE PEDESTAL
	ELECTRIC MANHOLE		TELEPHONE HANDHOLE
	ELECTRIC RISER		TRAFFIC MANHOLE
	GAS VALVE		PROPERTY POST
	GAS MARKER		PROPERTY FLAG POLE
	GUY WIRE		UTILITY MARKER
	MAILBOX		WATER FIRE HYDRANT
	MISC. MANHOLE		WATER METER
	TREE, DECIDUOUS		WATER VALVE
	BUSH		

ABBREVIATIONS											
A/C	AIR CONDITIONING	DI	DUCTILE IRON	HB	HOSE BIBB	PP	POWER POLE	STD	STANDARD		
ANSI	AMERICAN NATIONAL STANDARDS INSTITUTE	DIA	DIAMETER	HDPE	HIGH DENSITY POLYETHYLENE	PED	PEDESTAL	STRUCT	STRUCTURAL		
APPROX	APPROXIMATE	DIM	DIMENSION	HH	HANDHOLE	PERF	PERFORATED	SYS	SYSTEM		
ARCH	ARCHITECT	DIMJ	DUCTILE IRON MECHANICAL JOINT	HORIZ	HORIZONTAL	PI	POINT OF INTERSECTION	TAN	TANGENT		
ARV	AIR RELIEF VALVE	DIRJ	DUCTILE IRON RESTRAINED JOINT	HP	HORSE POWER	PL	PLATE	TBA	TO BE ABANDONED THIS CONTRACT		
ASPH	ASPHALT	DS	DOWNSPOUT	HPT	HIGH POINT	PL	PROPERTY LINE	TBM	TEMPORARY BENCHMARK		
ASTM	AMERICAN SOCIETY FOR TESTING AND MATERIALS	DWG	DRAWING	HT	HEIGHT	PPM	PARTS PER MILLION	TEL	TELEPHONE		
AUTO	AUTOMATIC	E	EAST	HVAC	HEATING, VENTILATING AND AIR CONDITIONING	PREFAB	PREFABRICATED	TEMP	TEMPORARY		
BB	BUFFALO BOX	E	ELECTRIC	ID	INSIDE DIAMETER	PRKG	PARKING	TH	TELEPHONE HANDHOLE		
BDRY	BOUNDARY	EL	ELEVATION	IN	INCH	PROJ	PROJECT	THK	THICK(NESS)		
BFV	BUTTERFLY VALVE	ELEV	ELEVATION	INV	INVERT	PSI	POUNDS PER SQUARE INCH	TOB	TOP OF BANK		
BLDG	BUILDING	EA	EACH	LF	LINEAR FEET	PT	POINT	TOPO	TOPOGRAPHY		
BM	BENCHMARK	ELEC	ELECTRIC	LPT	LOW POINT	PV	PLUG VALVE	TOS	TOE OF SLOPE		
CB	CATCH BASIN	EQ	EQUAL	MATL	MATERIAL	PVC	POLYVINYL CHLORIDE	TOW	TOP OF WALL		
CI	CURB INLET	EQUIP	EQUIPMENT	MECH	MECHANICAL	QTY	QUANTITY	TR	TOP OF RIM		
CIP	CAST-IN-PLACE	EX	EXISTING	MFG	MANUFACTURING	R	RADIUS	TR	TRAFFIC POLE		
CIPP	CURED IN PLACE PIPE	EXIST	EXISTING	MFR	MANUFACTURER	RAS	RETURN ACTIVATED SLUDGE	TV	TELEVISION		
CLR	CLEARANCE	FD	FLOOR DRAIN	MH	MANHOLE	RCP	REINFORCED CONCRETE PIPE	TYP	TYPICAL		
CMP	CORRUGATED METAL PIPE	FH	FIRE HYDRANT	MIN	MINIMUM	RD	ROOF DRAIN	UTIL	UTILITY		
CPP	CORRUGATED PLASTIC PIPE	FIG	FIGURE	MISC	MISCELLANEOUS	REF	REFERENCE	VERT	VERTICAL		
CMU	CONCRETE MASONRY UNIT	FIN	FINISH	MJ	MECHANICAL JOINT	REQD	REQUIRED	VOL	VOLUME		
CO	CLEANOUT	FIN FLR	FINISH FLOOR	MOD	MODIFIED	REV	REVISION	W	WATER		
CONC	CONCRETE	FLEX	FLEXIBLE	N	NORTH	ROW	RIGHT OF WAY	W	WEST		
CP	CONTROL POINT	FT	FOOT (FEET)	NIC	NOT IN CONTRACT	R/W	RIGHT OF WAY	W	WIDE (WIDTH)		
C TO C	CENTER TO CENTER	FTG	FOOTING	NO	NUMBER	S	SOUTH	WAS	WASTE ACTIVATED SLUDGE		
CU FT	CUBIC FEET	G	GAS	NOM	NOMINAL	SCHD	SCHEDULE	W/	WITH		
CU YD	CUBIC YARDS	GAL	GALLON(S)	NTS	NOT TO SCALE	SD	STORM DRAIN	W/O	WITHOUT		
DAT	DATUM	GALV	GALVANIZED	OC	ON CENTER	SEC	SECTION	WS	WATERSTOP		
DEMO	DEMOLITION	GOVT	GOVERNMENT	OD	OUTSIDE DIAMETER	SPEC	SPECIFICATION	WT	WEIGHT		
DEPT	DEPARTMENT	GPM	GALLONS PER MINUTE	OH	OVERHEAD	SS	STAINLESS STEEL	WV	WATER VALVE		
DET	DETAIL	GV	GAS VALVE	P	POLE	STA	STATION	YD	YARD		

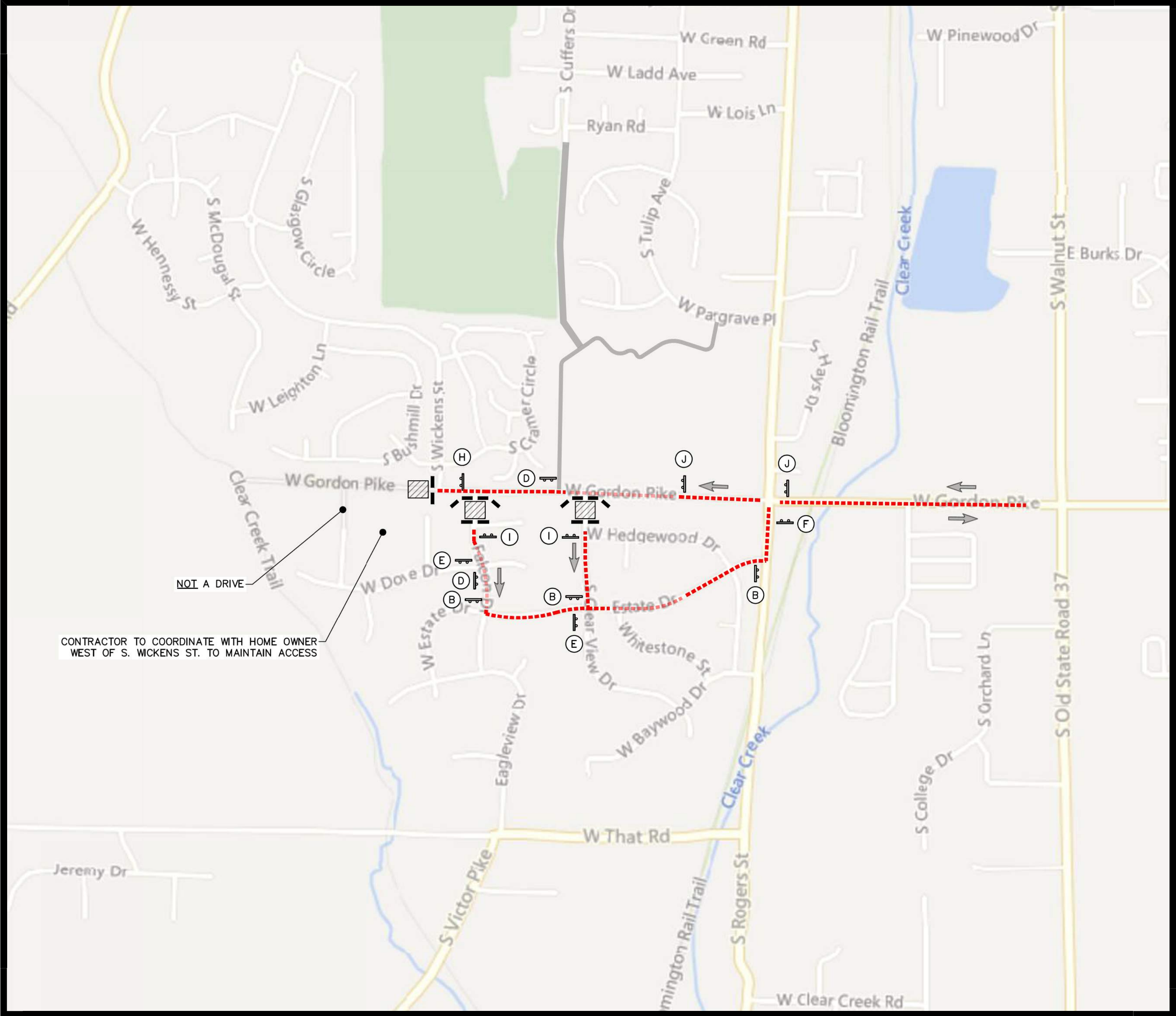


RECOMMENDED FOR APPROVAL		2/10/2023
	DESIGN ENGINEER	DATE
DESIGNED:	CSD	DRAWN:
		PJT
CHECKED:	KMC	CHECKED:
		CSD

CITY OF BLOOMINGTON UTILITIES

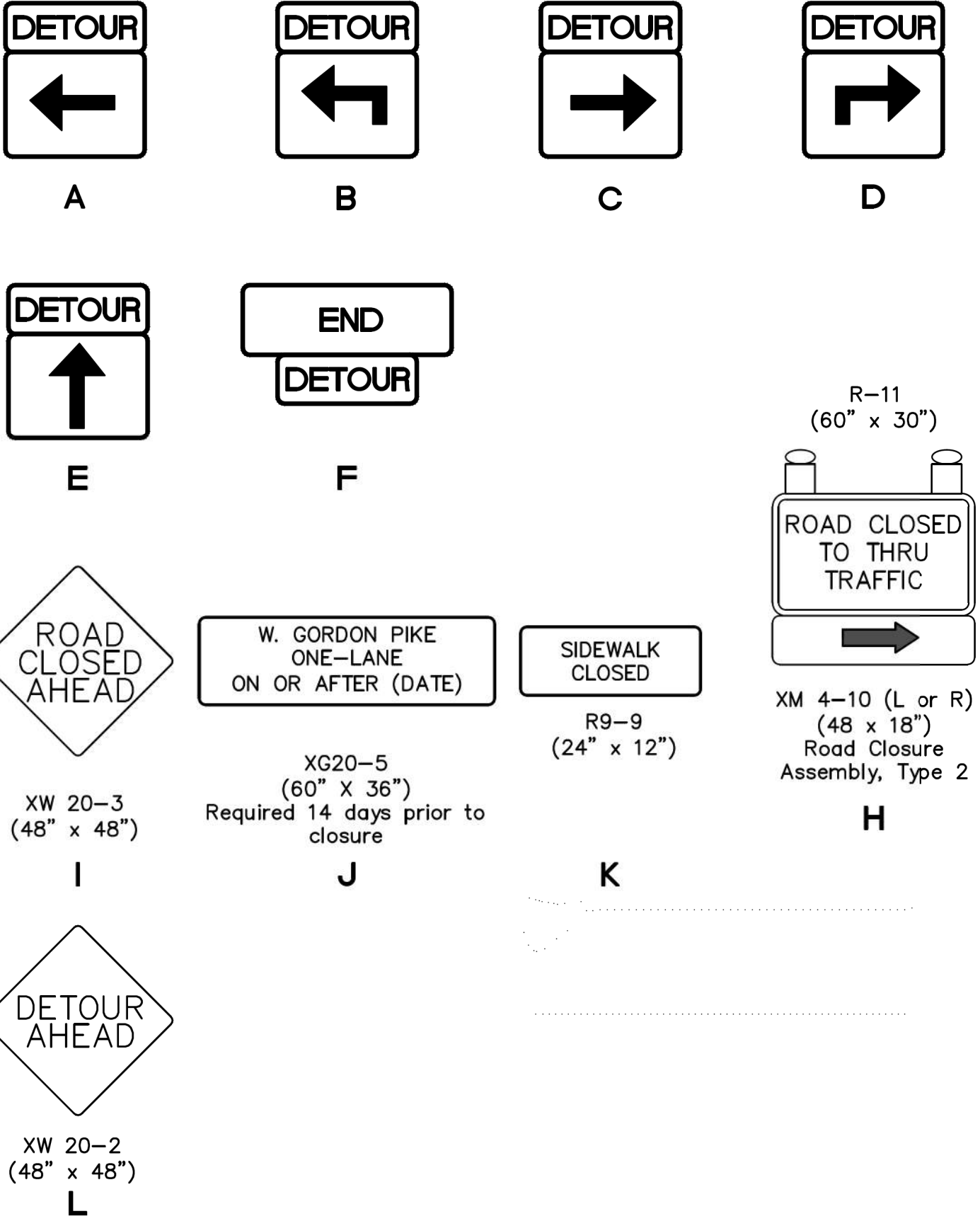
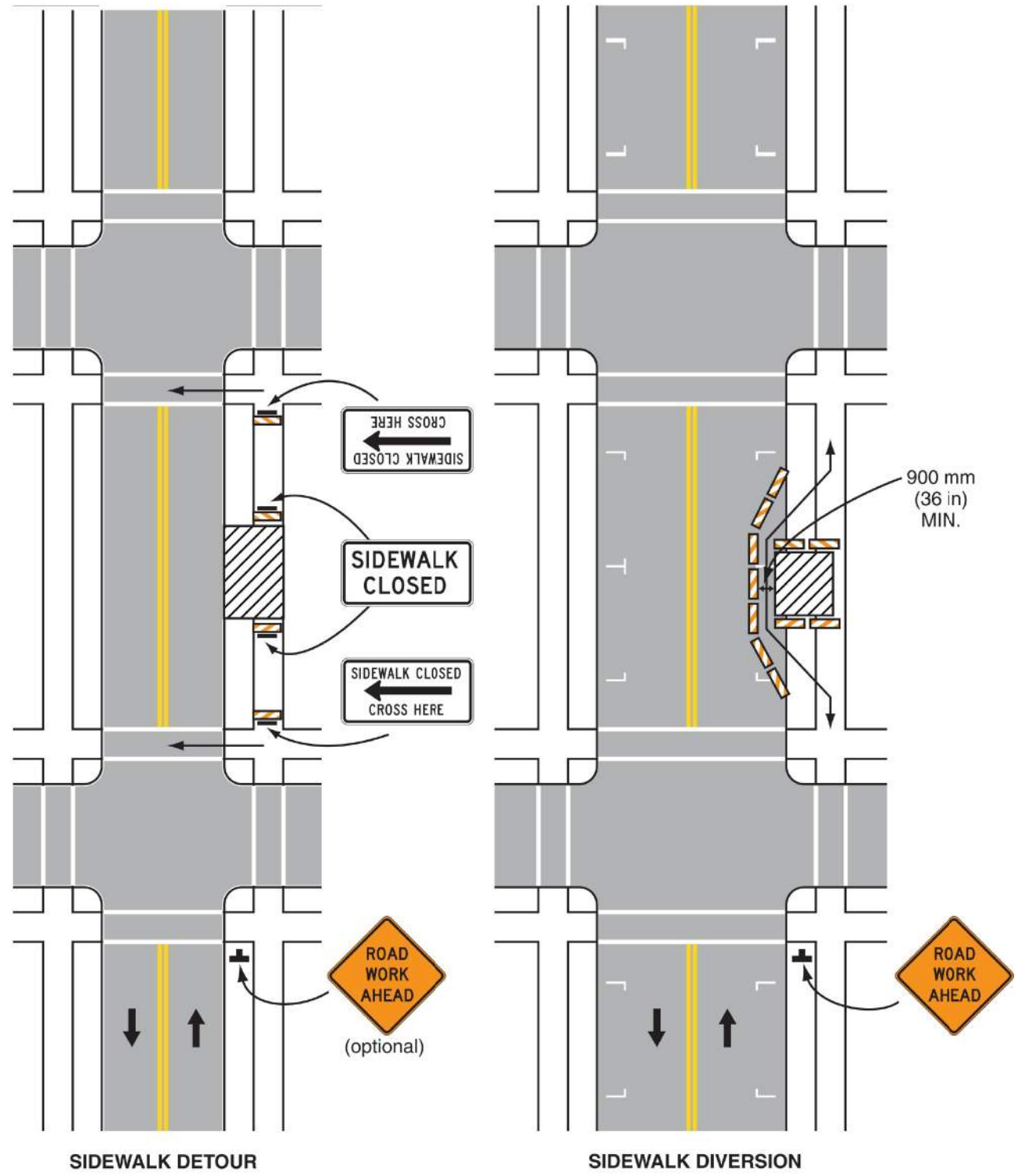
INDEX AND GENERAL NOTES

HORIZONTAL SCALE	BRIDGE FILE
N/A	N/A
VERTICAL SCALE	DESIGNATION
N/A	N/A
SURVEY BOOK	SHEETS
N/A	2 of 13
CONTRACT	PROJECT
N/A	2021.00628



MAINTENANCE OF TRAFFIC – LINES "W2", "W3" AND "W4"
ONE-LANE INTERSECTION AT
W. GORDON PIKE AND FALCON DRIVE AND
W. GORDON PIKE AND S. CLEAR VIEW DRIVE

SIDEWALK DETOUR OR DIVERSION



LEGEND	
	SIGN TYPE
	SIGN
	BARRICADE
	DETOUR ROUTE
	CONSTRUCTION ZONE
	LOW INTENSITY FLASHING YELLOW LIGHT (TYPE A)
	TRAFFIC FLOW

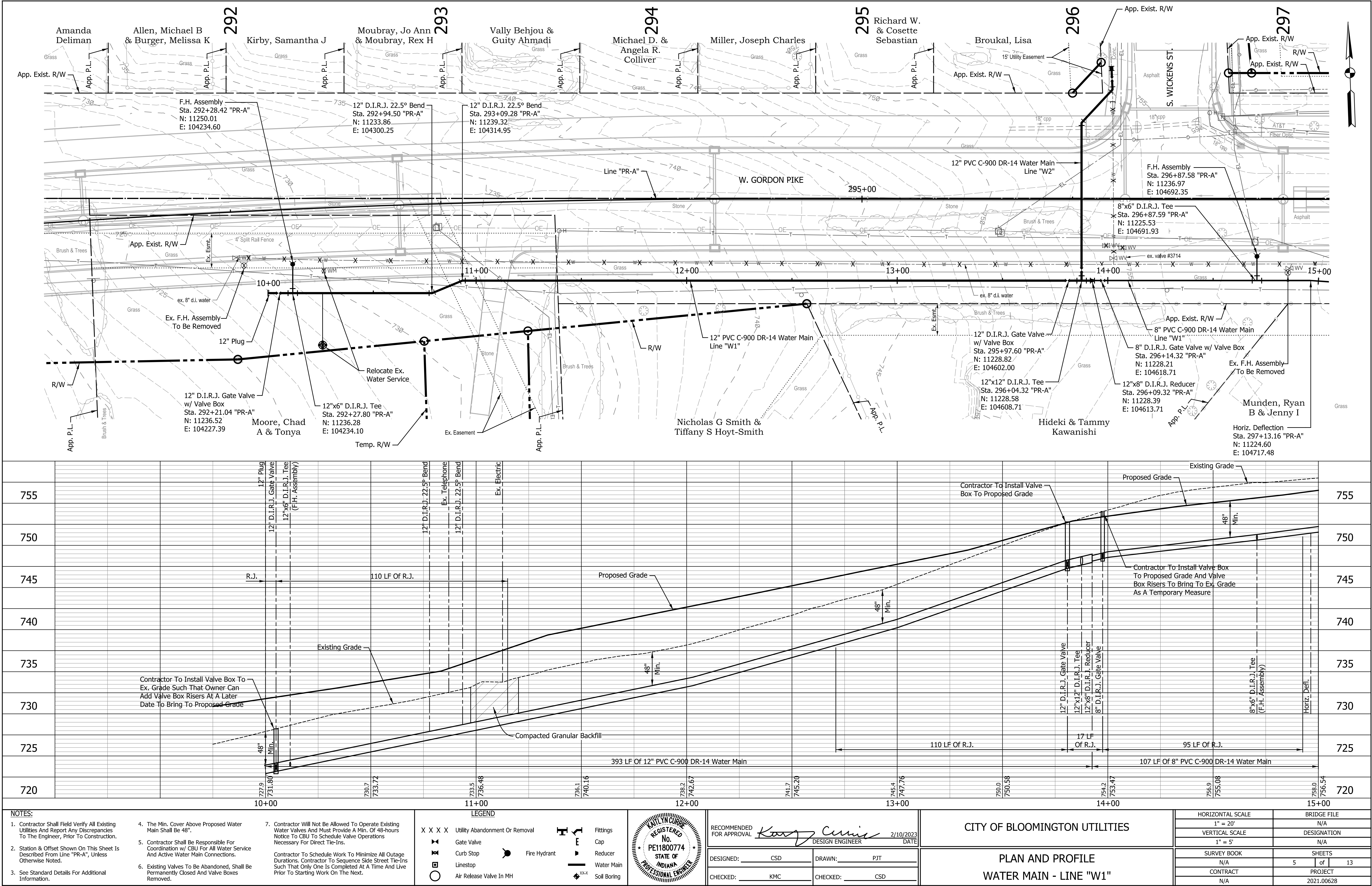
GENERAL NOTES	
1.	CONTRACTOR SHALL MAINTAIN ACCESS TO BUSINESSES AND RESIDENTIAL PROPERTIES THROUGHOUT THE DURATION OF THIS PROJECT.
2.	ALL SIGNS AND BARRICADES TO BE PLACED IN ACCORDANCE WITH THE LATEST EDITION OF THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES.
3.	FLAGGING OPERATIONS SHALL BE DONE IN ACCORDANCE WITH INDOT STANDARD DRAWINGS AND SPECIFICATIONS.
4.	PEDESTRIAN TRAFFIC SHALL BE MAINTAINED. ONE SIDE OF THE SIDEWALK ALONG W. GORDON PIKE TO BE KEPT OPEN AT ALL TIMES.

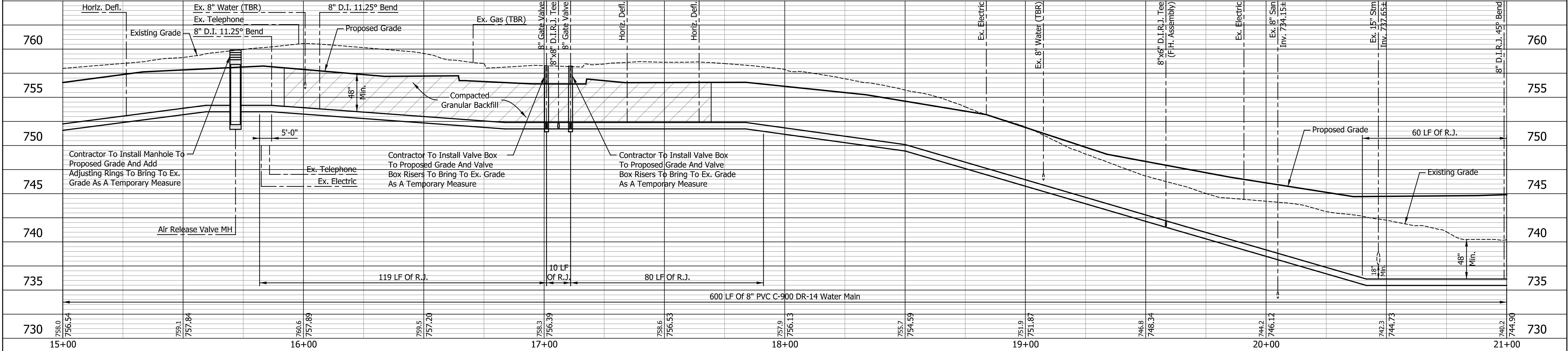
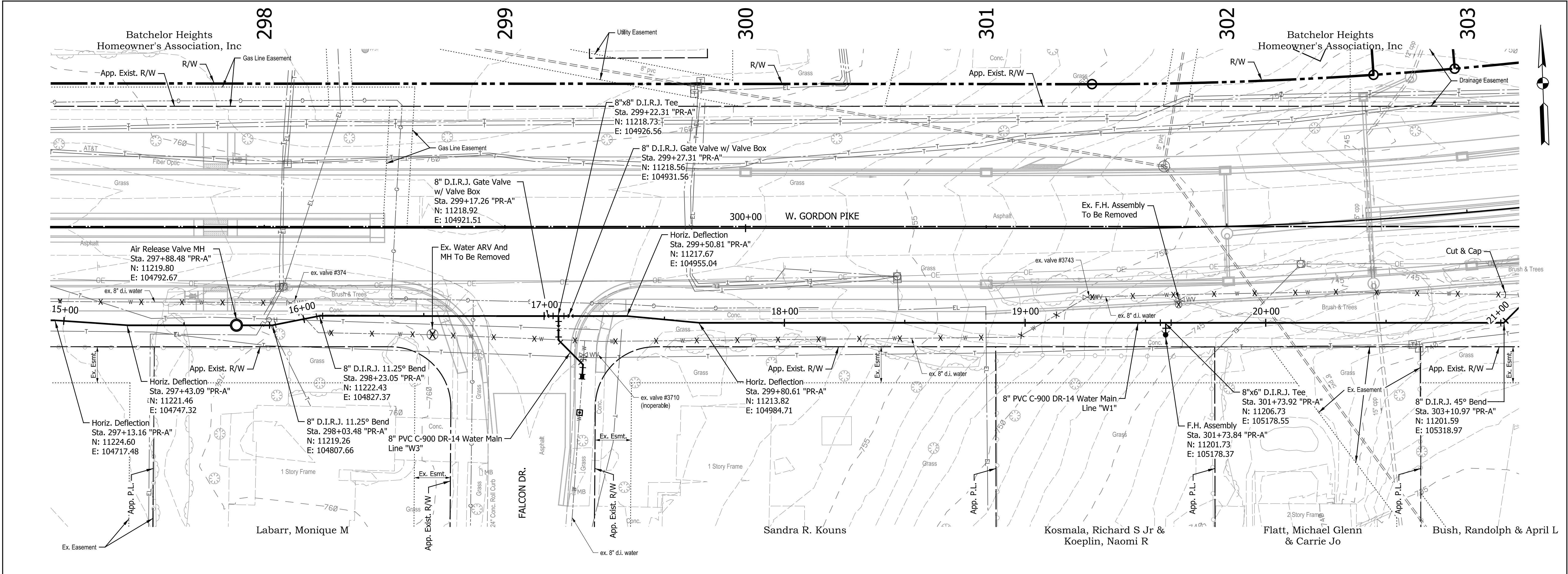
RECOMMENDED FOR APPROVAL		2/10/2023	
DESIGN ENGINEER		DATE	
DESIGNED: _____	CSD	DRAWN: _____	PJT
CHECKED: _____	KMC	CHECKED: _____	CSD

CITY OF BLOOMINGTON UTILITIES

TRAFFIC PLAN

HORIZONTAL SCALE	BRIDGE FILE
N/A	N/A
VERTICAL SCALE	DESIGNATION
N/A	N/A
SURVEY BOOK	SHEETS
N/A	4 of 13
CONTRACT	PROJECT
N/A	2021.00628





NOTES:

- Contractor Shall Field Verify All Existing Utilities And Report Any Discrepancies To The Engineer, Prior To Construction.
- Station & Offset Shown On This Sheet Is Described From Line "PR-A", Unless Otherwise Noted.
- See Standard Details For Additional Information.
- The Min. Cover Above Proposed Water Main Shall Be 48".
- Contractor Shall Be Responsible For Coordination w/ CBU For All Water Service And Active Water Main Connections.
- Existing Valves To Be Abandoned, Shall Be Permanently Closed And Valve Boxes Removed.
- Contractor Will Not Be Allowed To Operate Existing Water Valves And Must Provide A Min. Of 48-hours Notice To CBU To Schedule Valve Operations Necessary For Direct Tie-Ins.

Contractor To Schedule Work To Minimize All Outage Durations. Contractor To Sequence Side Street Tie-Ins Such That Only One Is Completed At A Time And Live Prior To Starting Work On The Next.

- LEGEND
- | | | | |
|---------|--------------------------------|--|-------------|
| X X X X | Utility Abandonment Or Removal | | Fittings |
| | Gate Valve | | Cap |
| | Curb Stop | | Reducer |
| | Linestop | | Water Main |
| | Air Release Valve In MH | | Soil Boring |



RECOMMENDED FOR APPROVAL *Kathy Currin* DESIGN ENGINEER 2/10/2023 DATE

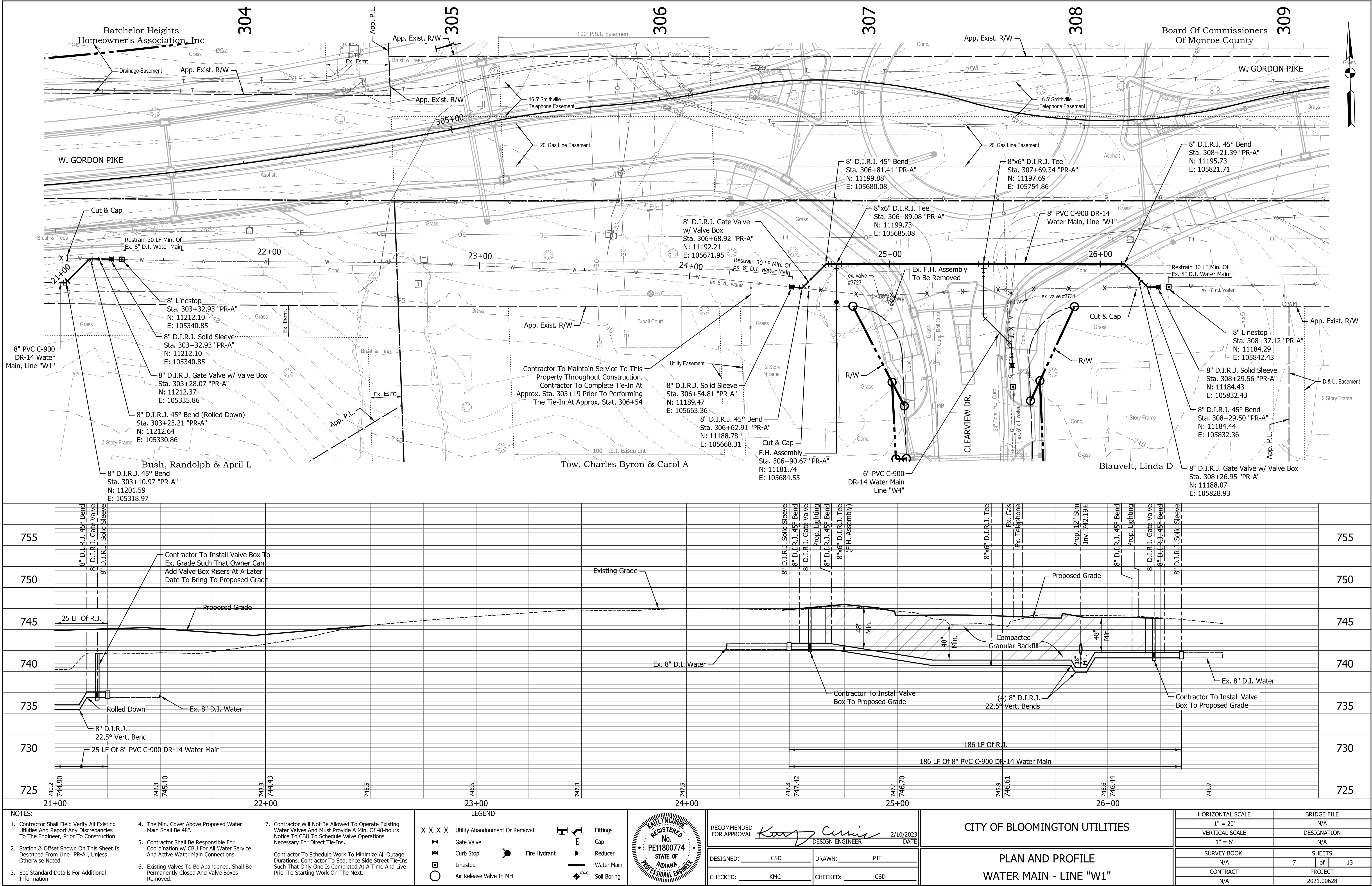
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CHECKED: KMC	CHECKED: CSD

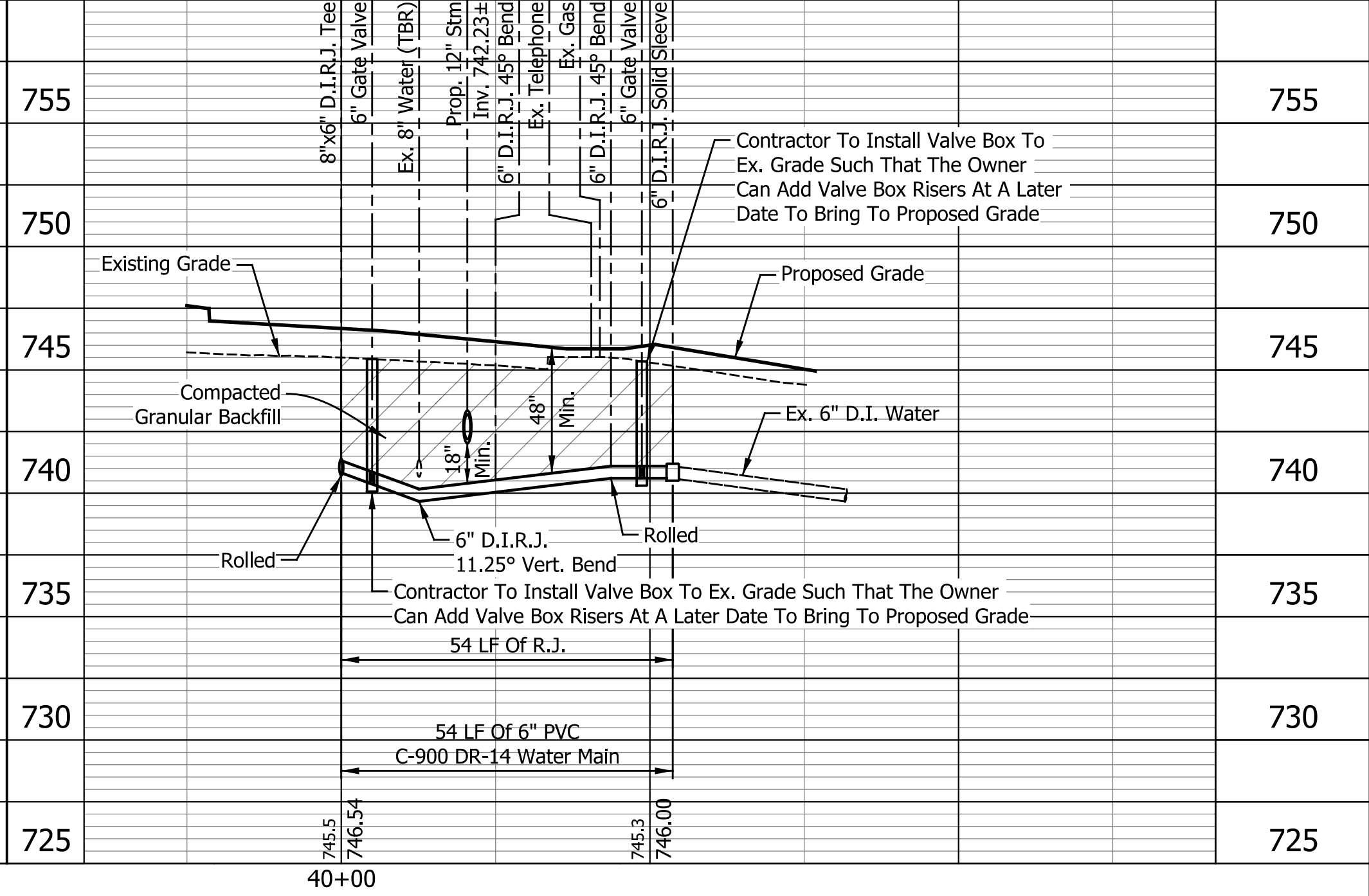
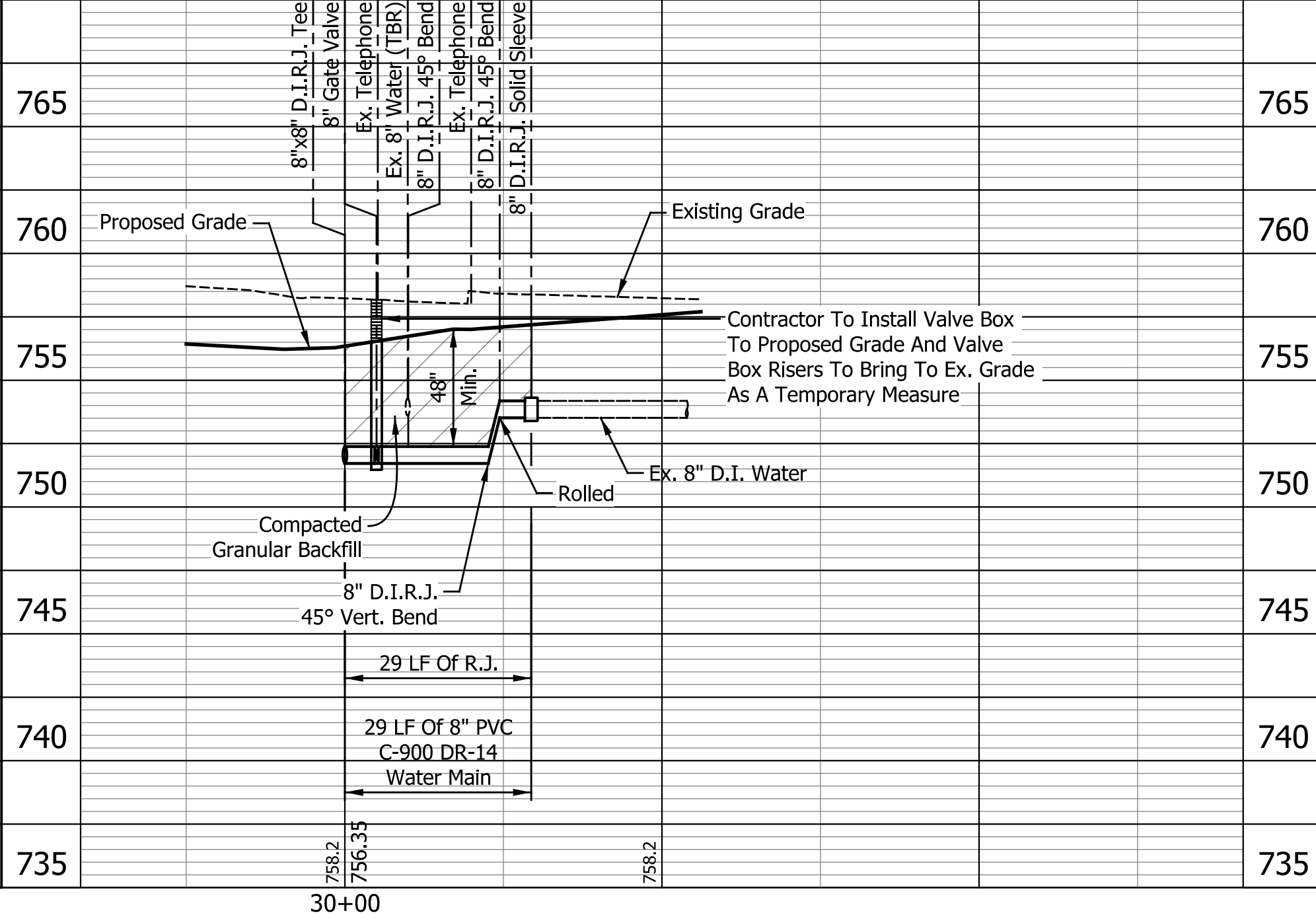
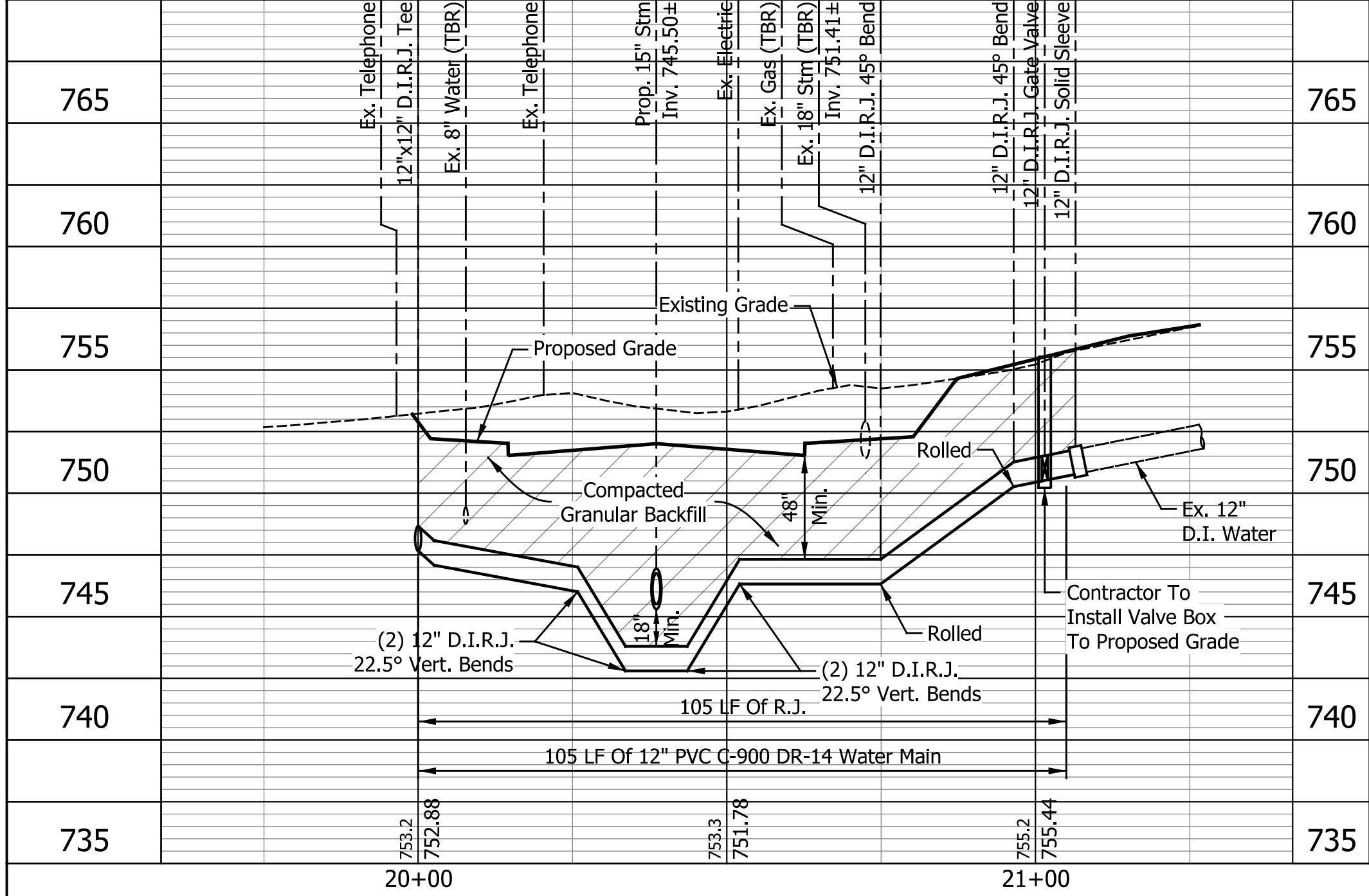
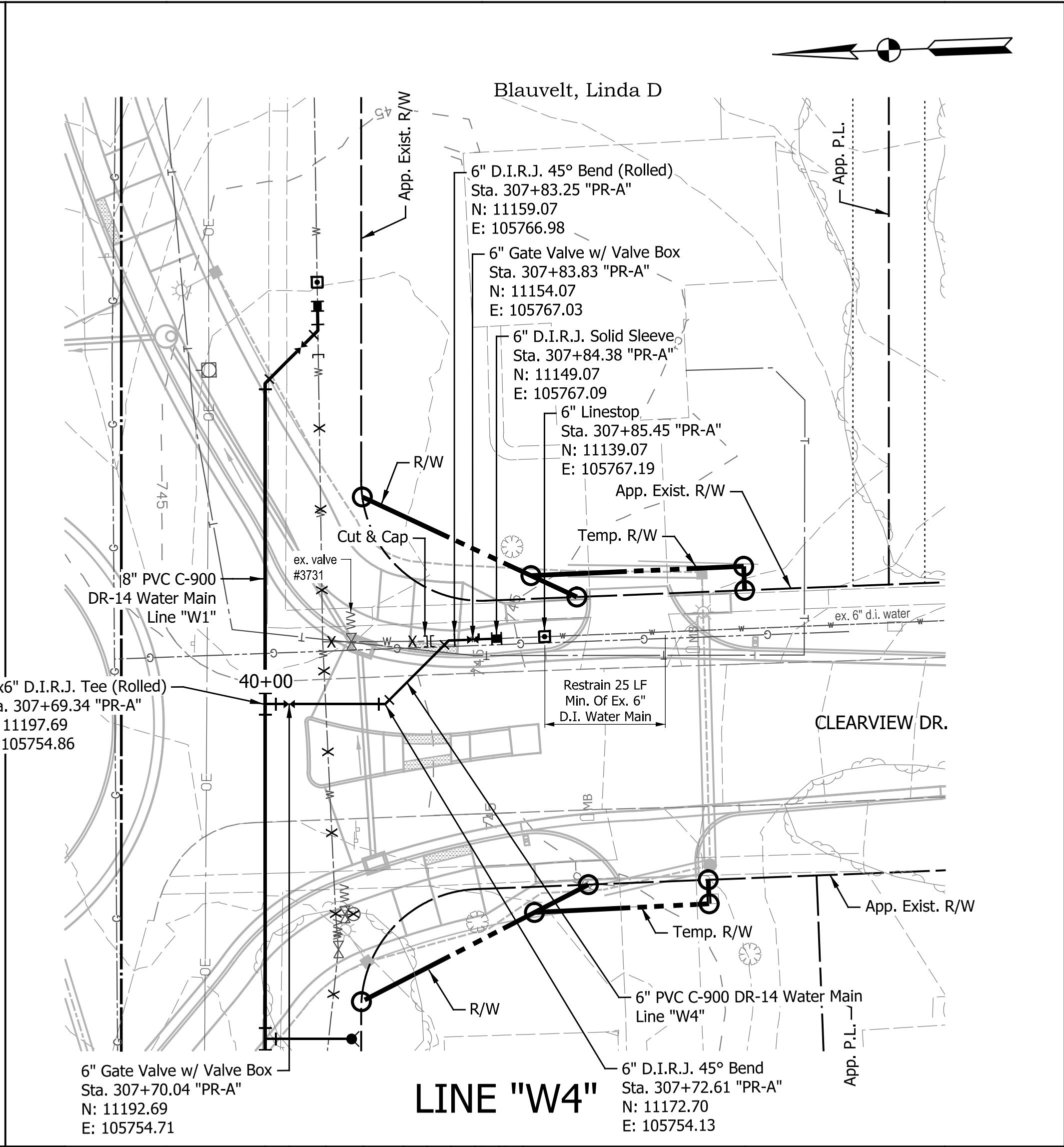
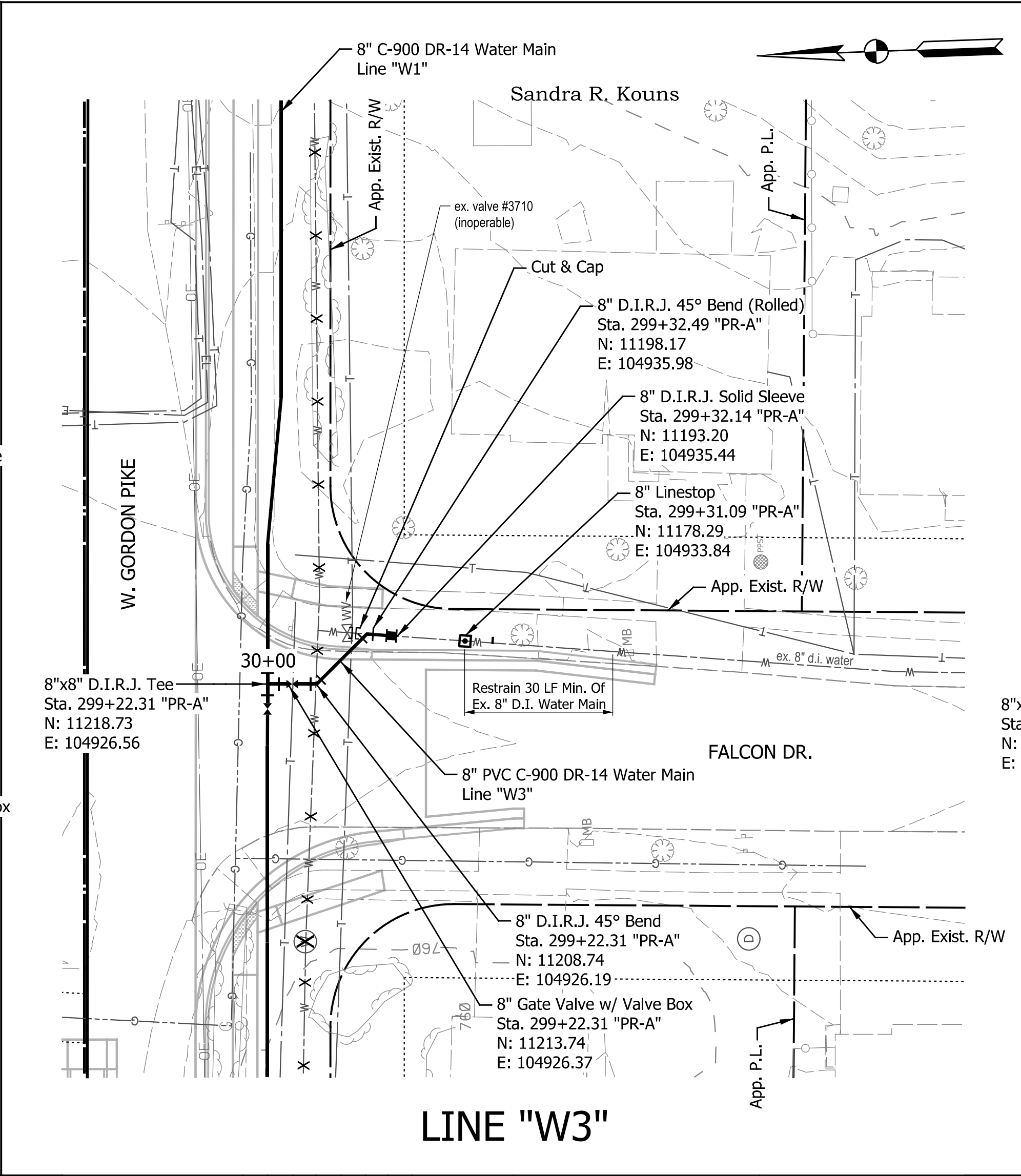
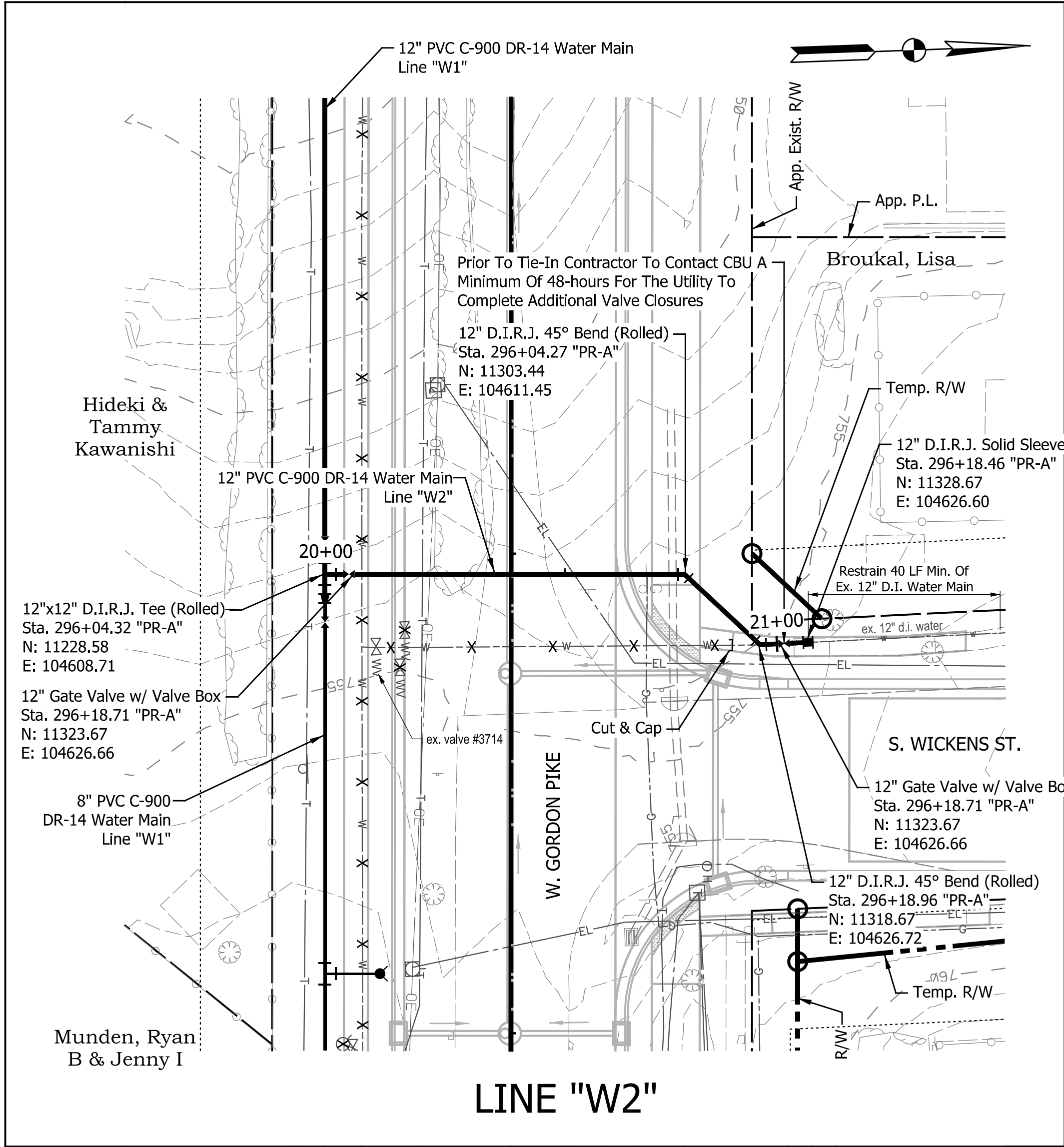
CITY OF BLOOMINGTON UTILITIES

PLAN AND PROFILE

WATER MAIN - LINE "W1"

HORIZONTAL SCALE	BRIDGE FILE
1" = 20'	N/A
VERTICAL SCALE	DESIGNATION
1" = 5'	N/A
SURVEY BOOK	SHEETS
N/A	6 of 13
CONTRACT	PROJECT
N/A	2021.00628





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LEGEND

X X X X Utility Abandonment Or Removal

Gate Valve

Curb Stop

Linestop

Air Release Valve In MH

Fittings

Cap

Reducer

Water Main

Soil Boring

Fire Hydrant

REGISTERED PROFESSIONAL ENGINEER

No. PE1800774

STATE OF INDIANA

RECOMMENDED FOR APPROVAL

DESIGN ENGINEER

2/10/2023

DATE

DESIGNED: CSD

DRAWN: PJT

CHECKED: KMC

CHECKED: CSD

CITY OF BLOOMINGTON UTILITIES

PLAN AND PROFILE

WATER MAIN - LINE "W2", "W3", "W4"

HORIZONTAL SCALE

1" = 20'

VERTICAL SCALE

1" = 5'

SURVEY BOOK

N/A

CONTRACT

N/A

BRIDGE FILE

N/A

DESIGNATION

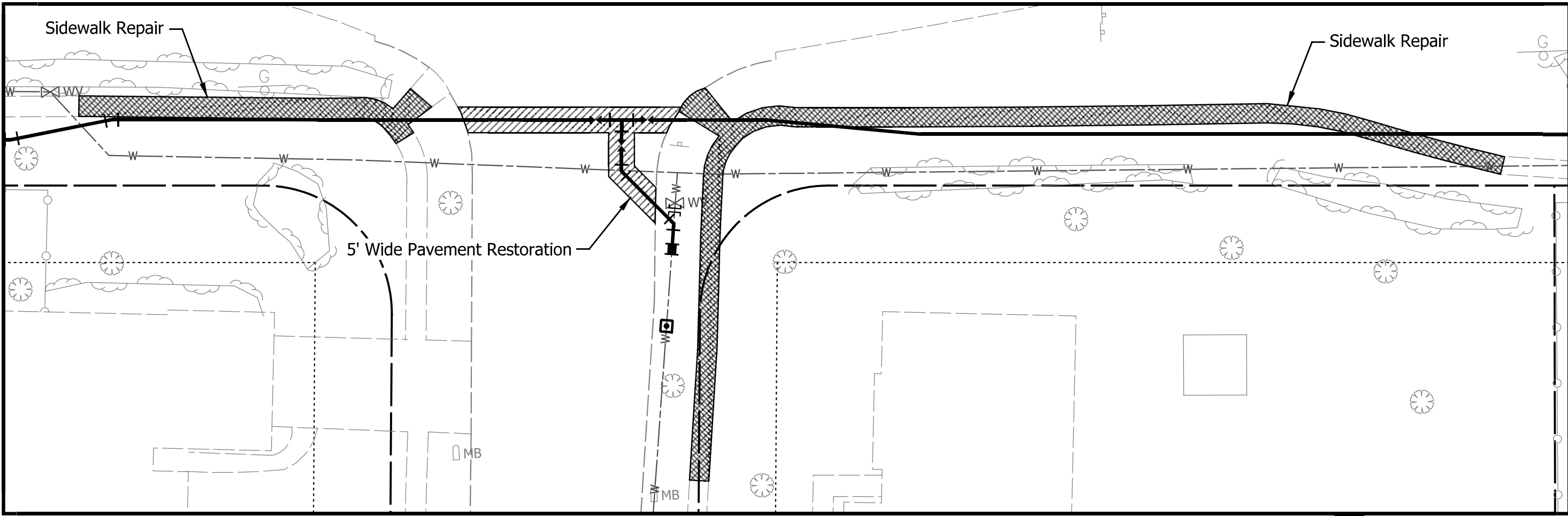
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SHEETS

8 of 13

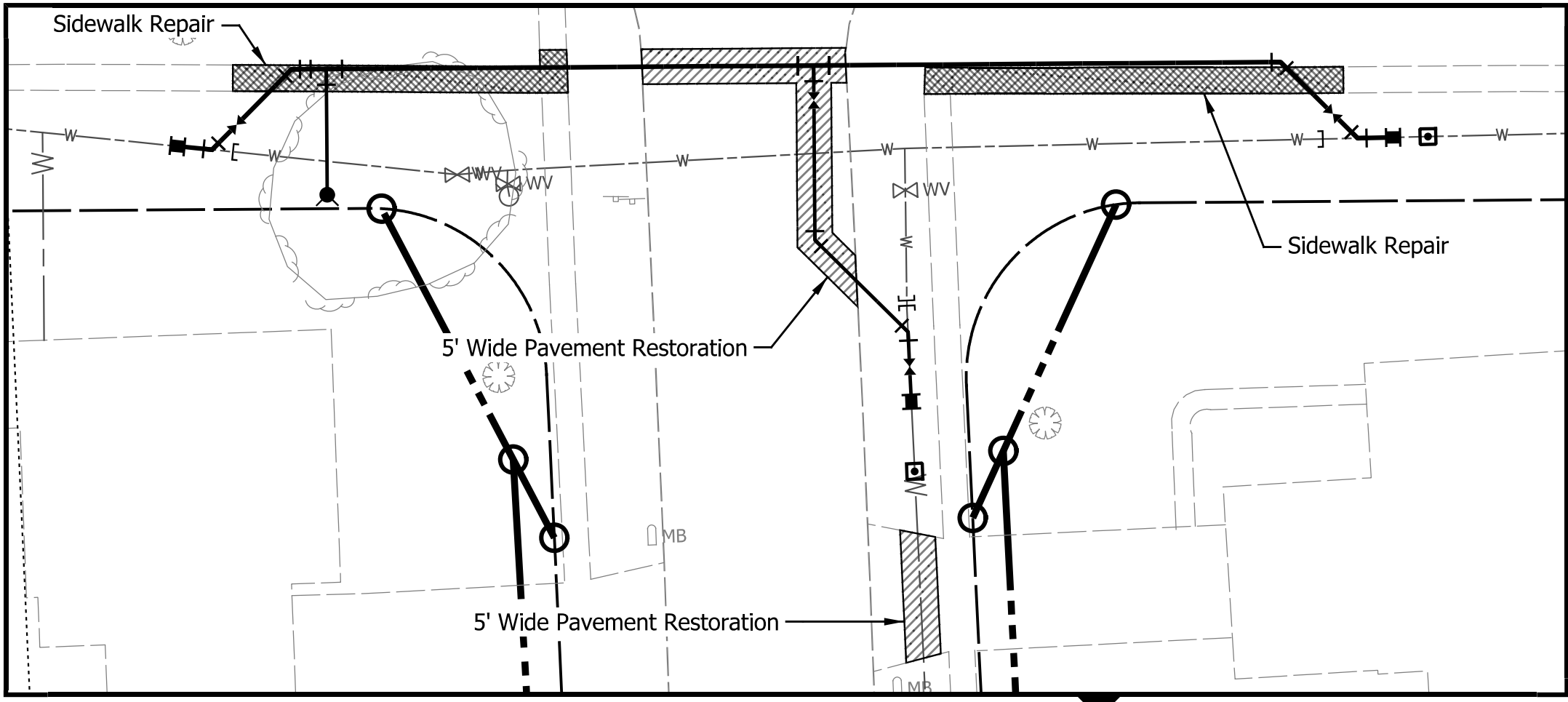
PROJECT

2021.00628



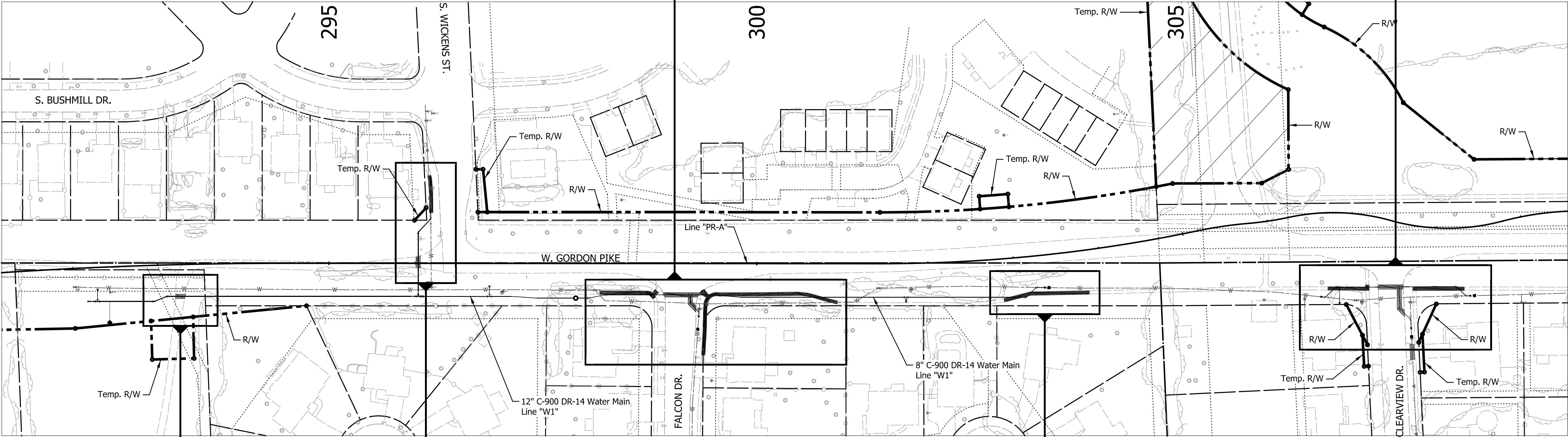
REPAIR AREA

NOT TO SCALE



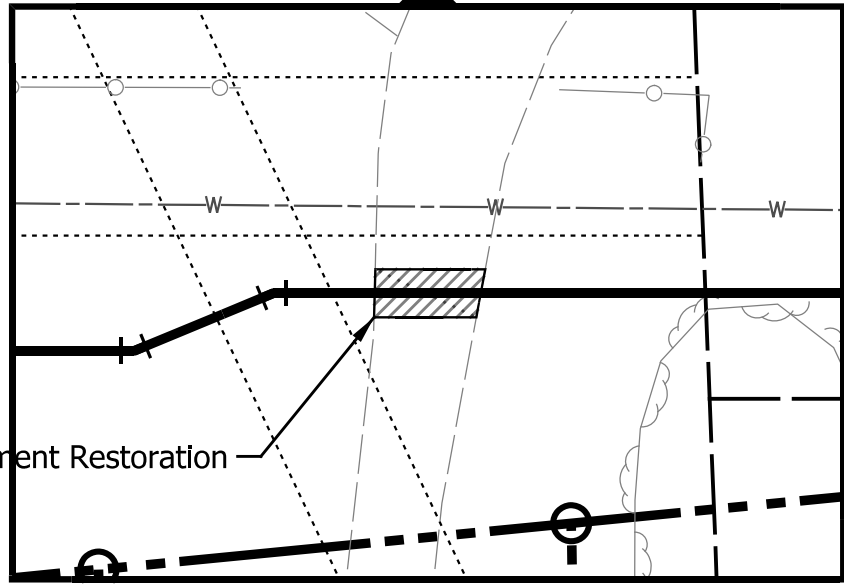
REPAIR AREA

NOT TO SCALE



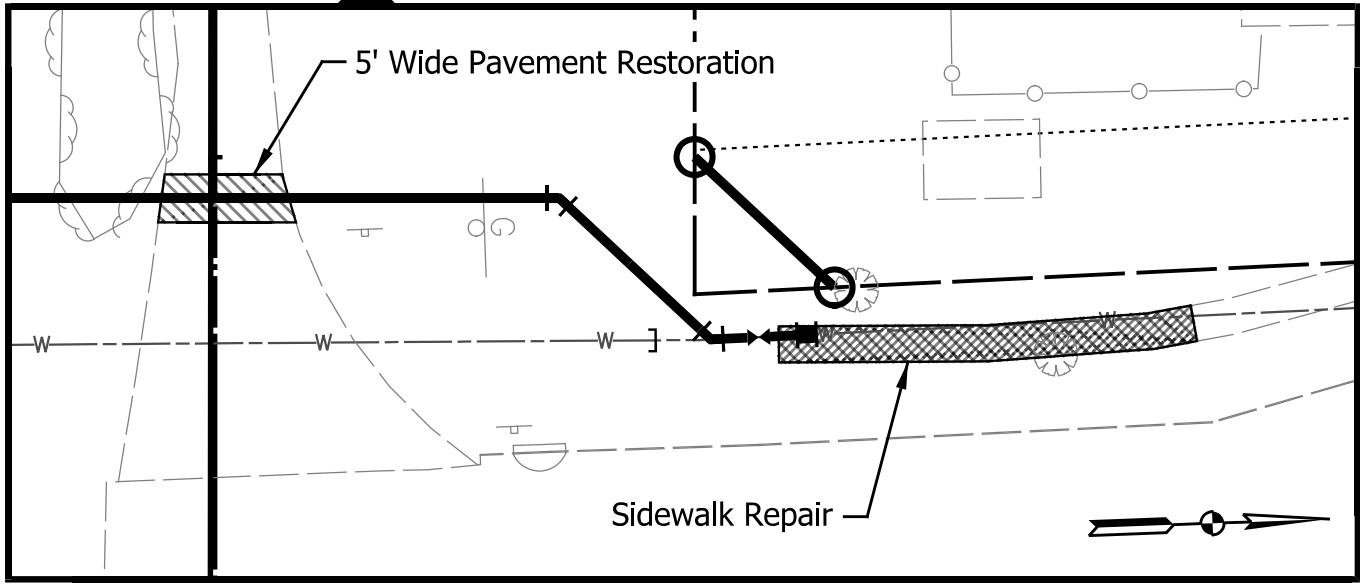
OVERALL VIEW

1" = 60'



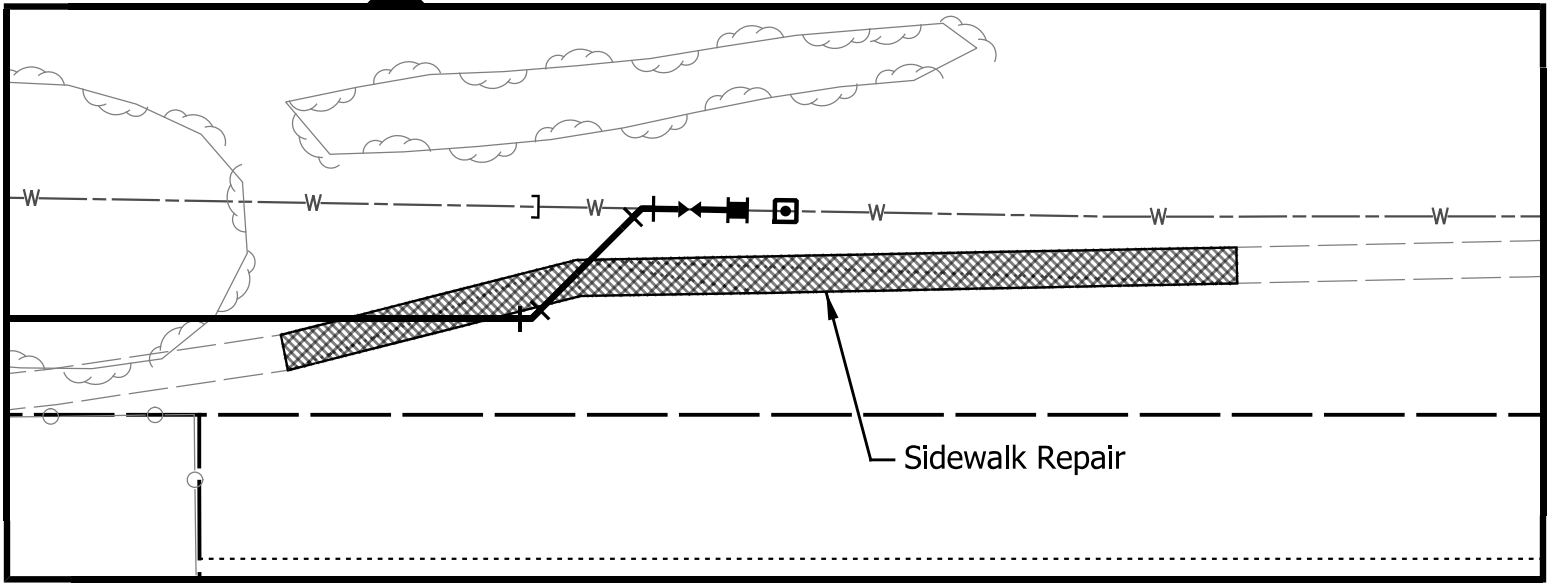
REPAIR AREA

NOT TO SCALE



REPAIR AREA

NOT TO SCALE



REPAIR AREA

NOT TO SCALE



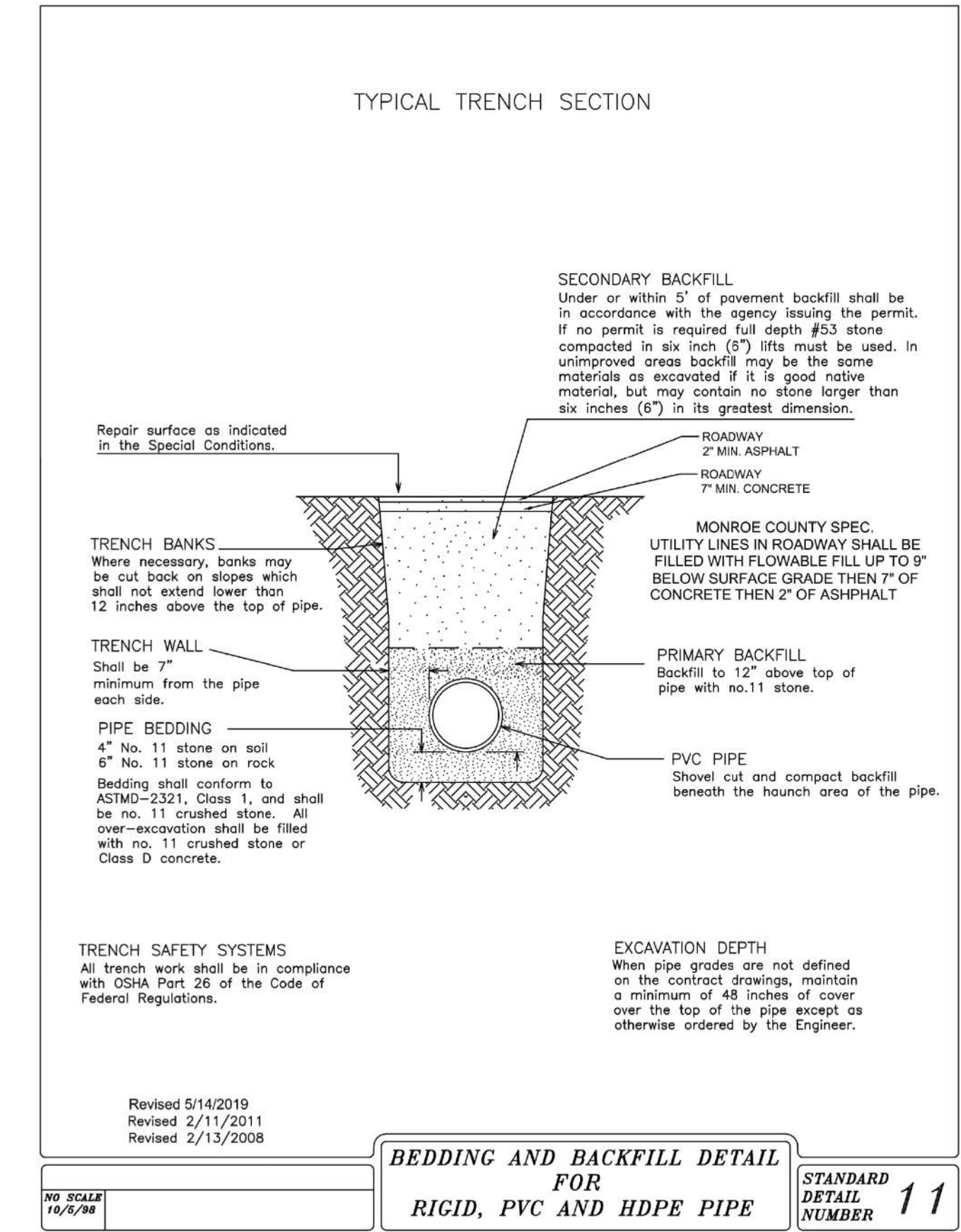
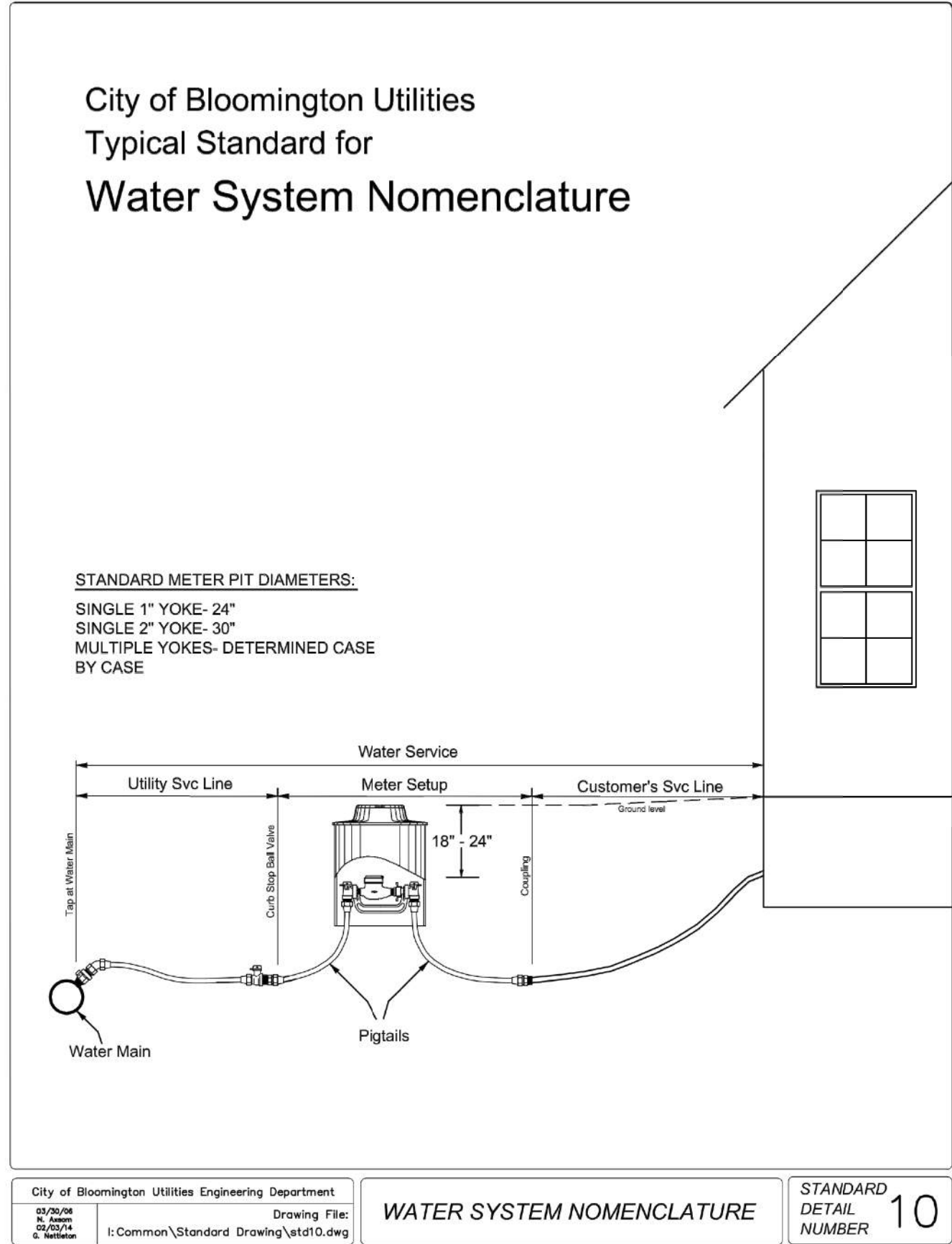
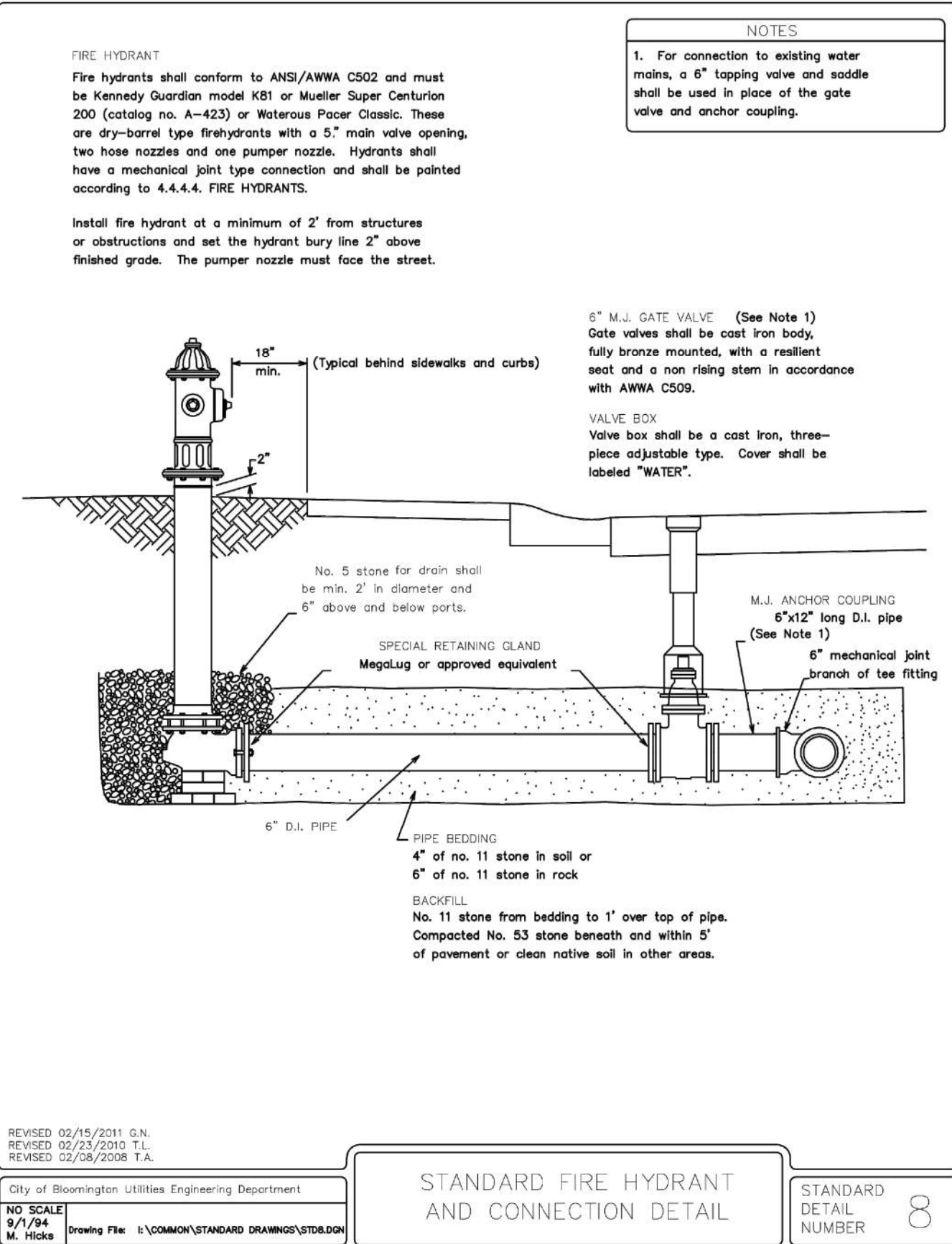
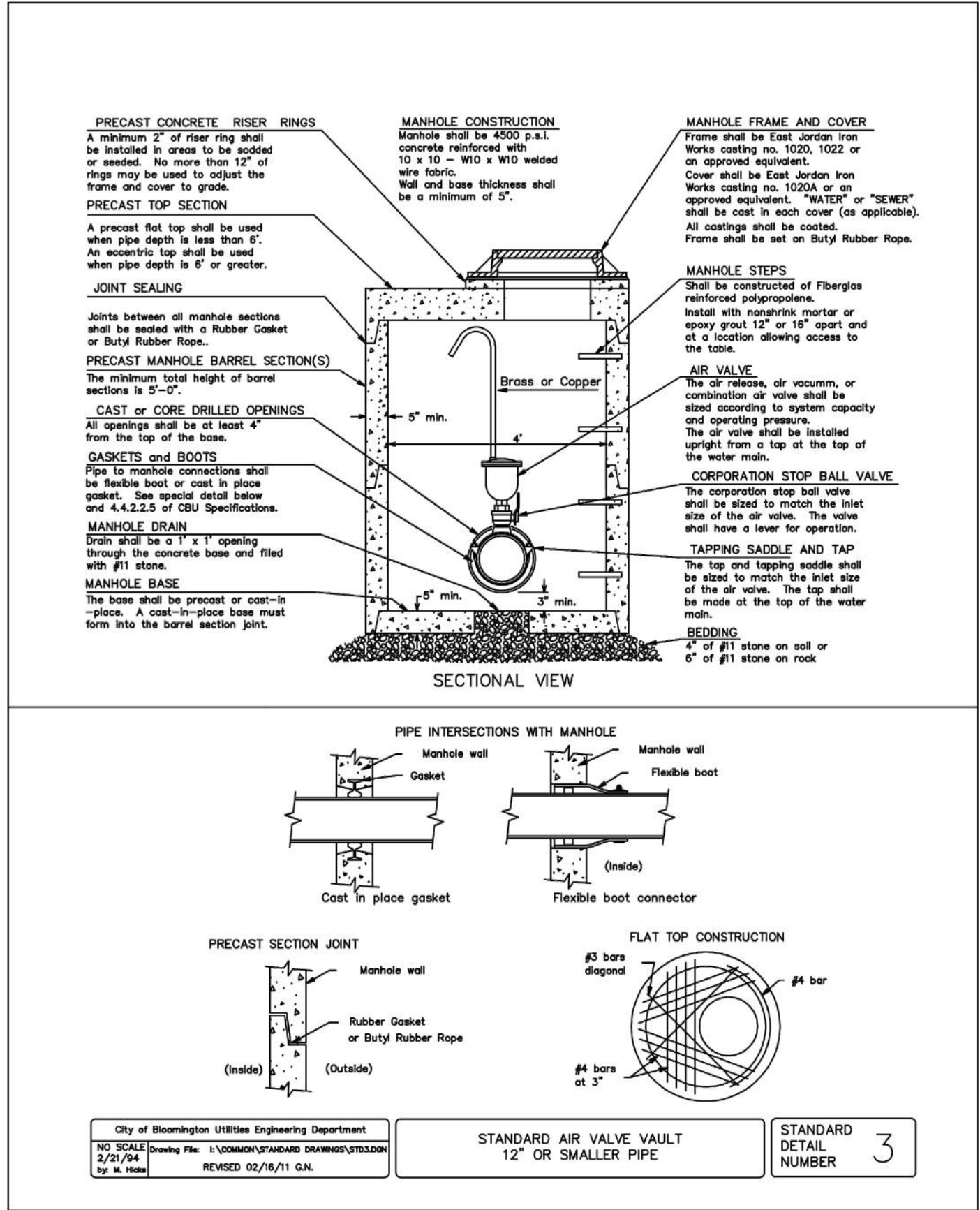
RECOMMENDED FOR APPROVAL *Kaitlyn Currie* 2/10/2023
DESIGN ENGINEER DATE

DESIGNED: CSD DRAWN: PJT
CHECKED: KMC CHECKED: CSD

CITY OF BLOOMINGTON UTILITIES

RESTORATION PLAN

HORIZONTAL SCALE	BRIDGE FILE	
AS NOTED	N/A	
VERTICAL SCALE	DESIGNATION	
N/A	N/A	
SURVEY BOOK	SHEETS	
N/A	9	of 13
CONTRACT	PROJECT	
N/A	2021.00628	



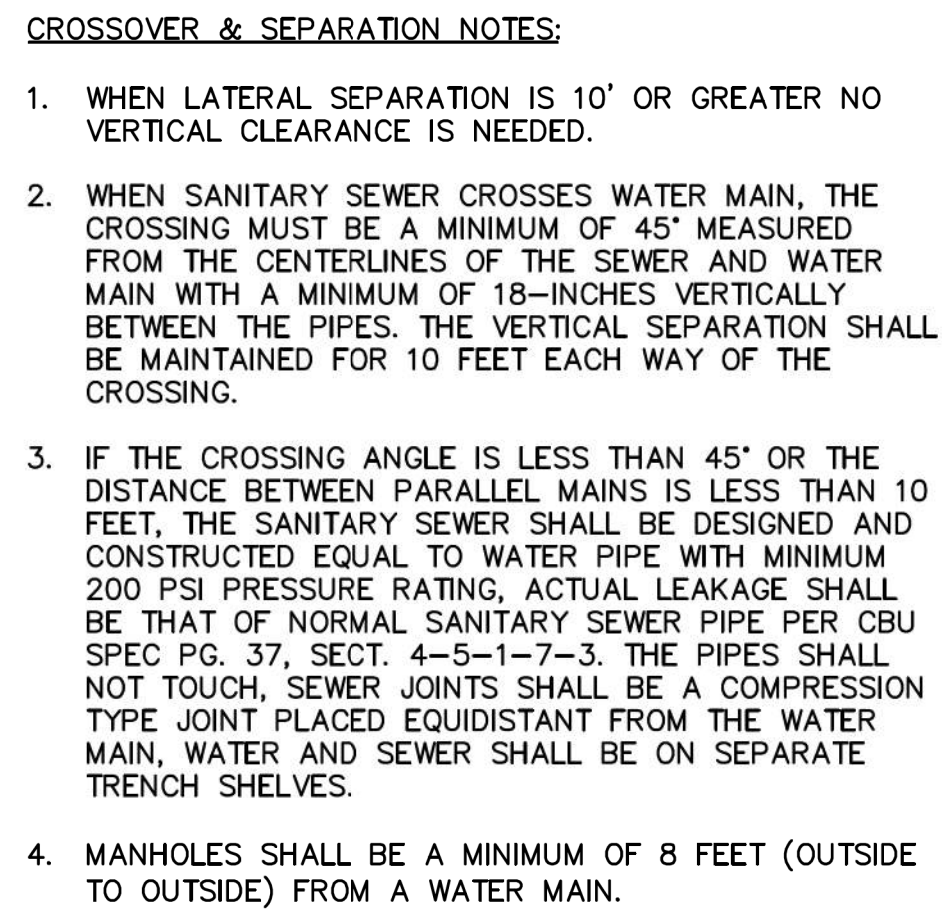
RECOMMENDED FOR APPROVAL
Kaitlyn Curran
DESIGN ENGINEER
2/10/2023
DATE

DESIGNED: CSD
DRAWN: PJT
CHECKED: KMC
CHECKED: CSD

CITY OF BLOOMINGTON UTILITIES

STANDARD DETAILS
WATER MAIN

HORIZONTAL SCALE	BRIDGE FILE
N/A	N/A
VERTICAL SCALE	DESIGNATION
N/A	N/A
SURVEY BOOK	SHEETS
N/A	10 of 13
CONTRACT	PROJECT
N/A	2021.00628



The image contains two technical drawings of a gate valve assembly, labeled "SIDE VIEW" and "FRONT VIEW".

SIDE VIEW: This drawing shows the valve assembly from the side. Key components and dimensions include:

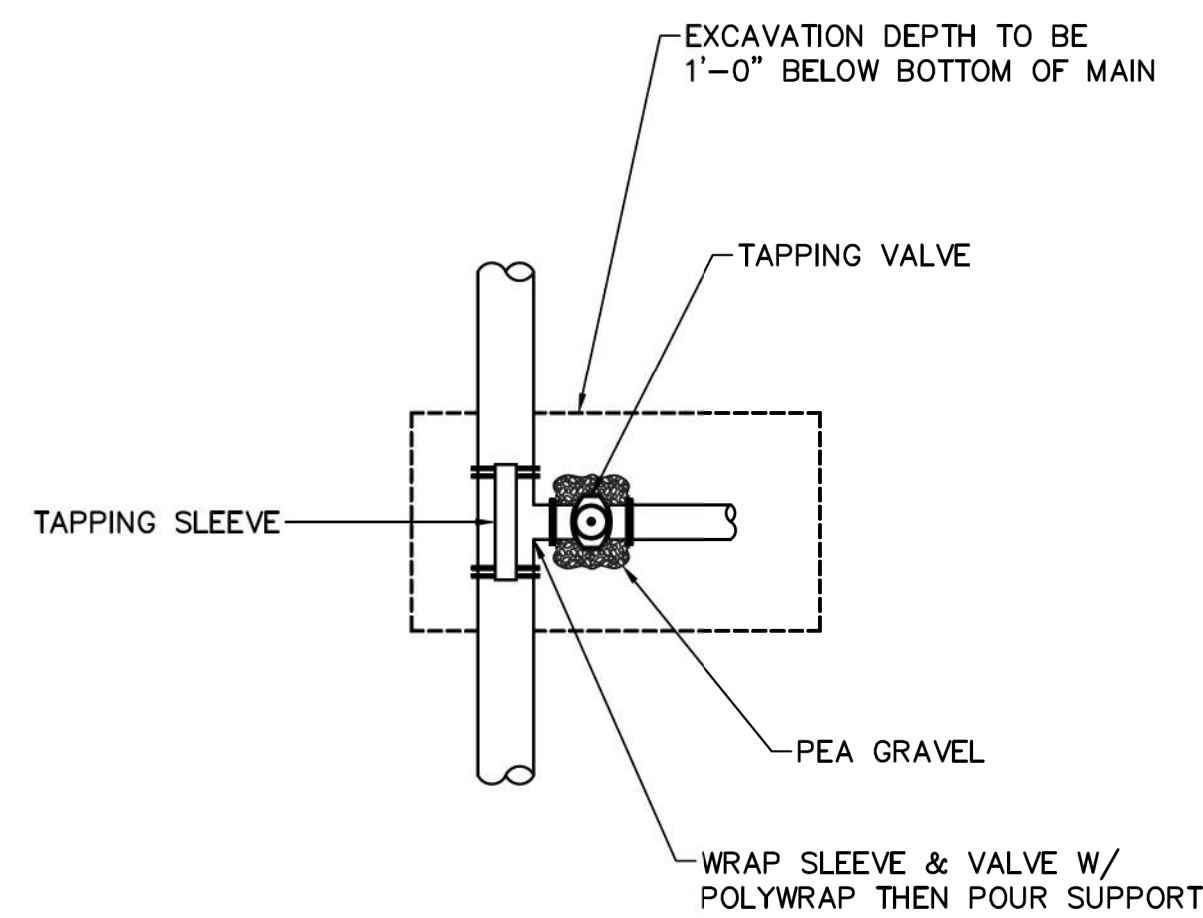
- COVER TO BE MARKED "WATER"**: Located at the top left.
- CONCRETE COLLAR**: A ring around the top of the valve.
- FINAL GRADE**: The ground level line.
- ADJUSTABLE VALVE BOX, UPPER BARREL**: The upper section of the valve housing.
- ADJUSTABLE VALVE BOX, LOWER BARREL**: The lower section of the valve housing.
- VERIFY AND MATCH OPERATING KEY STYLE AND "OPEN" DIRECTION W/ WATER UTILITY BEFORE STARTING. (SEE SPECS.)**: A note pointing to the valve handle.
- VALVE BOX CENTERING DEVICE**: A component at the base of the valve box.
- POLYETHYLENE WRAP**: A layer around the valve box.
- 3,000 PSI CONC. THRUST BLOCK (3 CU. FT.)**: A large concrete block at the bottom.
- GATE VALVE PER SPECIFICATIONS**: The main valve body.
- Dimensions**: 2' MIN. (TYP.) for the top section, 6" (TYP.) for the collar, and 6" for the thrust block.
- Backfill**: Secondary backfill above the valve box and bedding and primary backfill material below it.

FRONT VIEW: This drawing shows the valve assembly from the front. Key components and dimensions include:

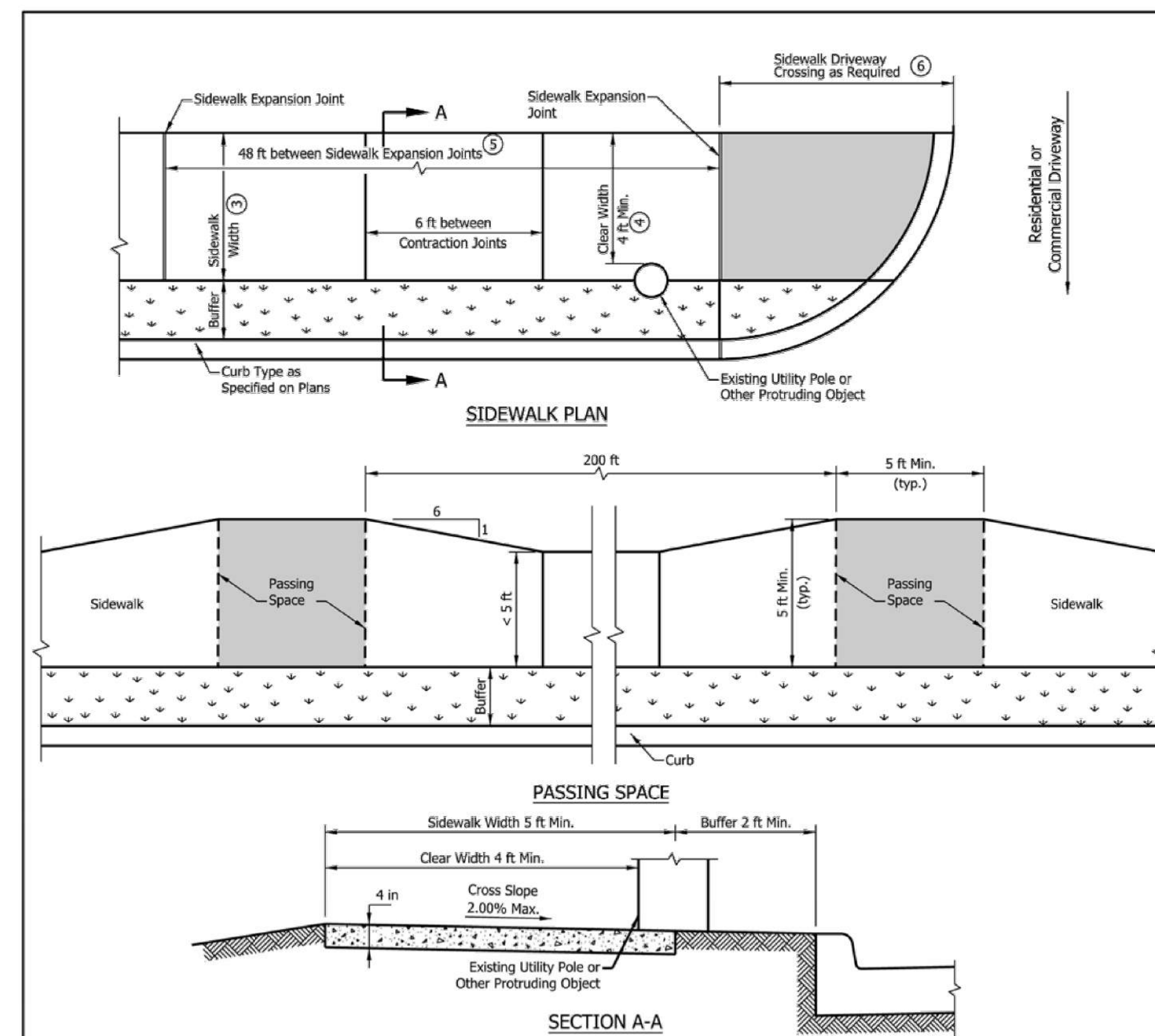
- COVER TO BE MARKED "WATER"**: Located at the top left.
- CONCRETE COLLAR**: A ring around the top of the valve.
- FINAL GRADE**: The ground level line.
- ADJUSTABLE VALVE BOX, UPPER BARREL**: The upper section of the valve housing.
- ADJUSTABLE VALVE BOX, LOWER BARREL**: The lower section of the valve housing.
- VERIFY AND MATCH OPERATING KEY STYLE AND "OPEN" DIRECTION W/ WATER UTILITY BEFORE STARTING. (SEE SPECS.)**: A note pointing to the valve handle.
- VALVE BOX CENTERING DEVICE**: A component at the base of the valve box.
- POLYETHYLENE WRAP**: A layer around the valve box.
- 3,000 PSI CONC. THRUST BLOCK (3 CU. FT.)**: A large concrete block at the bottom.
- GATE VALVE PER SPECIFICATIONS**: The main valve body.
- Dimensions**: 6" (TYP.) for the collar, and 48" MIN. for the total height of the backfill.
- Backfill**: Secondary backfill above the valve box and bedding and primary backfill material below it.
- TRENCH WIDTH**: Indicated at the bottom.

NOTES:

1. WRAP VALVE IN POLYETHYLENE WRAP BEFORE INSTALLING SUPPORT OR THRUST BLOCK.
2. CONCRETE COLLAR SHALL BE 6" THICK AND MADE OF 4000 PSI CONCRETE.



LIVE WATER MAIN CONNECTION DETAIL
NOT TO SCALE



NOTES:

1. All slopes are absolute rather than relative to the sidewalk or roadway grade. Slopes at least 0.50% less than the maximum are preferred.
2. The grade of the sidewalk is measured in the direction of pedestrian travel. The grade of the sidewalk shall not exceed the grade of the adjacent roadway. The cross slope is measured perpendicular to the direction of pedestrian travel. The cross slope of the sidewalk shall not exceed 2.00%.
3. Where there is a buffer between the sidewalk and curb, the preferred minimum sidewalk clear width is 5 ft.
4. A 4-ft minimum clear width shall be provided adjacent to street furniture, mailbox, utility pole, or other protruding object. Where the sidewalk clear width is less than 5 ft, a passing space shall be provided at 200 ft intervals. The passing space minimum clear dimension shall be 5 ft x 5 ft.
5. See Standard Drawing E 604-CCSJ-01 for sidewalk expansion joint details.
6. See Standard Drawing E 604-SDWK-03 for sidewalk driveway crossing configurations.

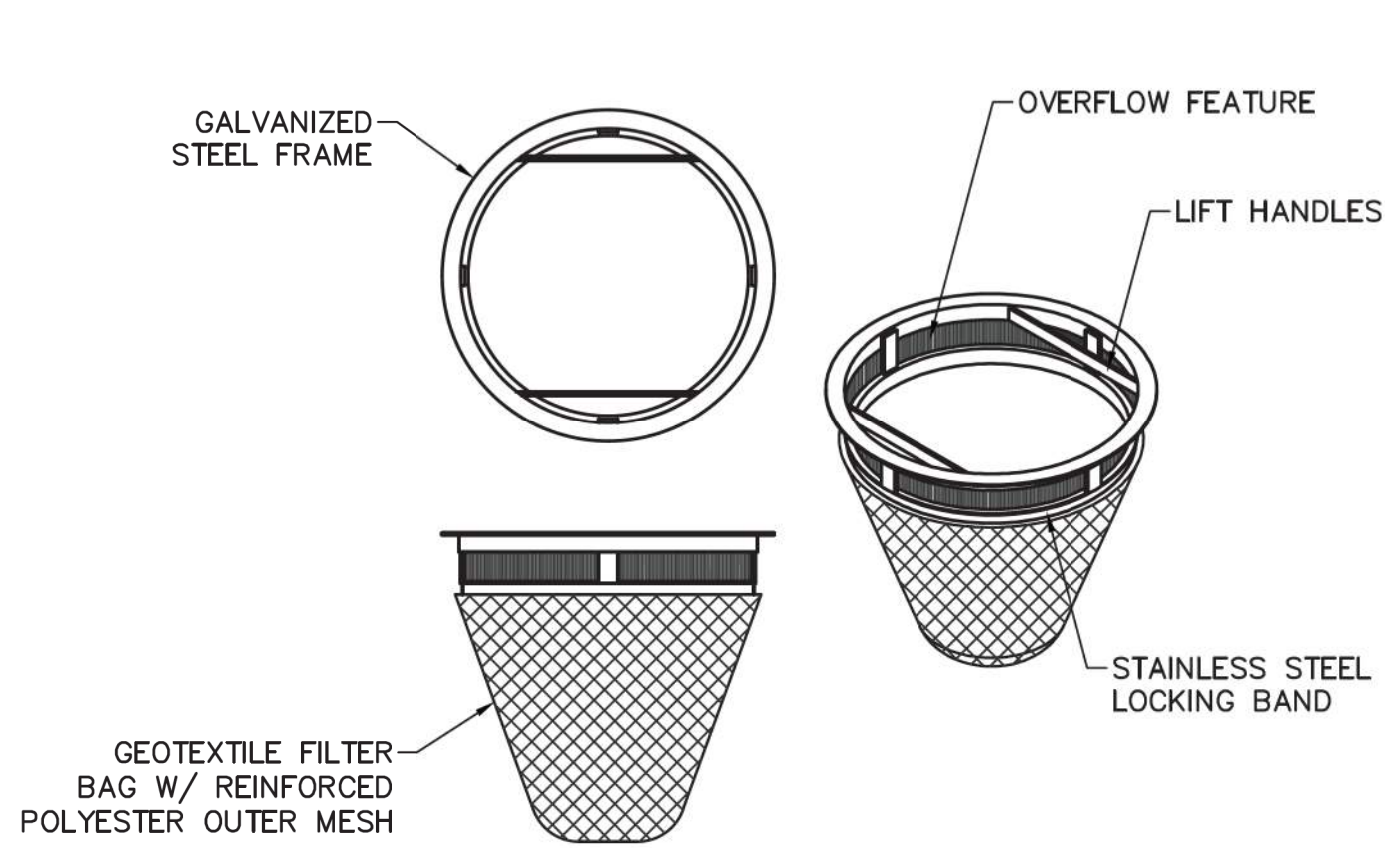
INDIANA DEPARTMENT OF TRANSPORTATION	
SIDEWALK DETAILS SIDEWALK WITH BUFFER SEPTEMBER 2016	
STANDARD DRAWING NO. E 604-SDWK-01	
	<i>s/ Elizabeth W. Phillips</i> 03/16/11 DESIGN STANDARDS ENGINEER DATE <i>s/ Mark A. Miller</i> 03/18/11 CHIEF ENGINEER DATE

RECOMMENDED FOR APPROVAL Kary Currie 2/10/2023
DESIGN ENGINEER DATE

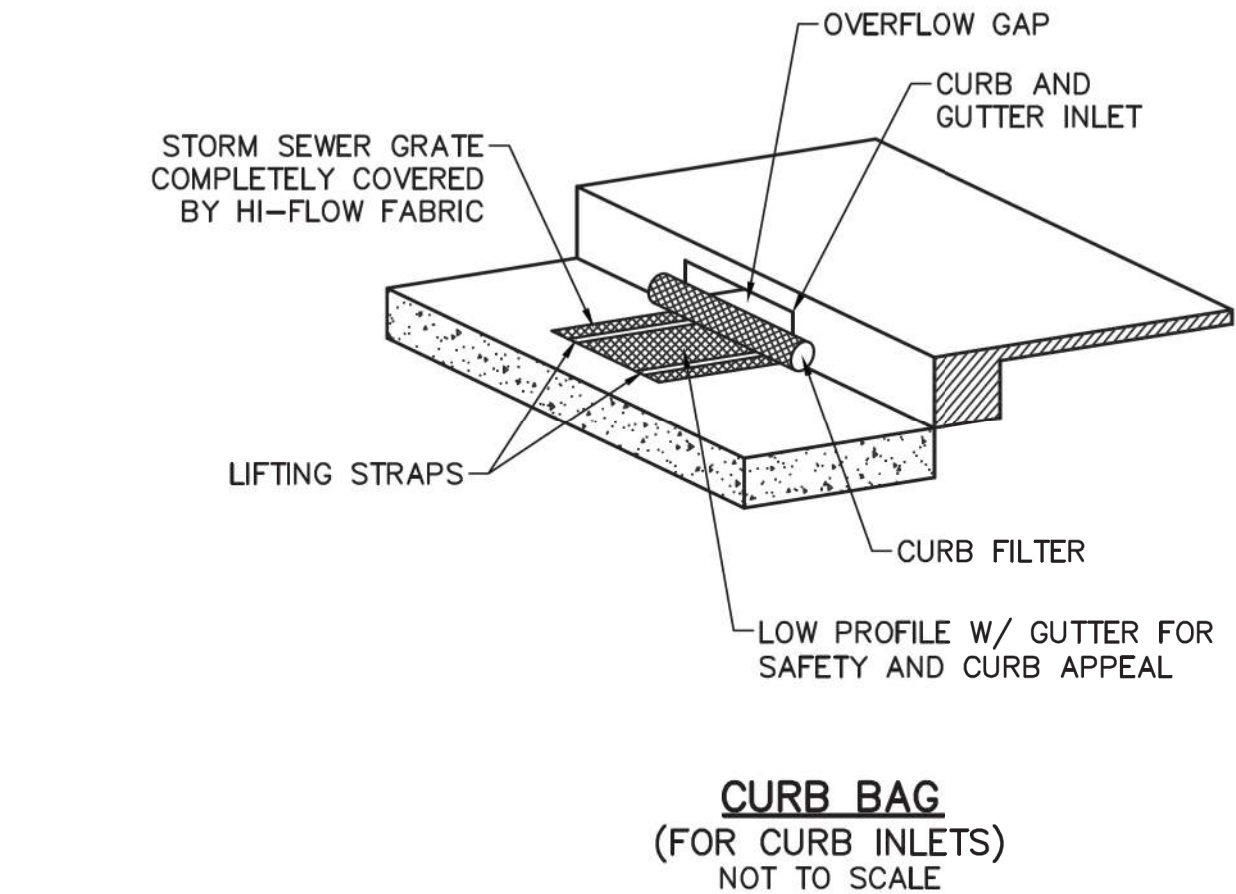
DESIGNED: _____ CSD	DRAWN: _____ PJT
CHECKED: _____ KMC	CHECKED: _____ CSD

STANDARD DETAILS

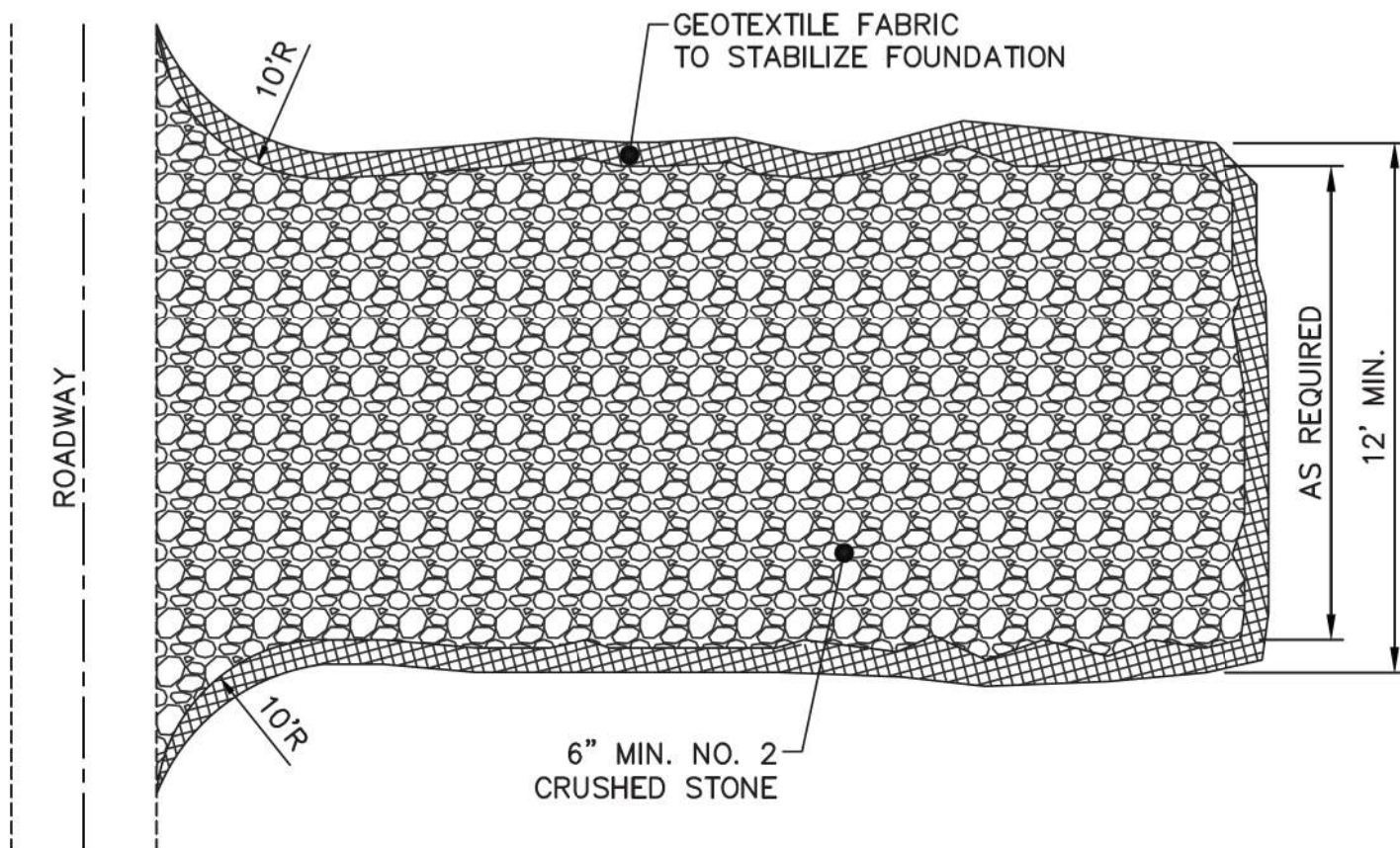
	HORIZONTAL SCALE		BRIDGE FILE	
	N/A		N/A	
	VERTICAL SCALE		DESIGNATION	
	N/A		N/A	
	SURVEY BOOK		SHEETS	
	N/A	11	of	13
	CONTRACT		PROJECT	
	N/A		2021.00628	



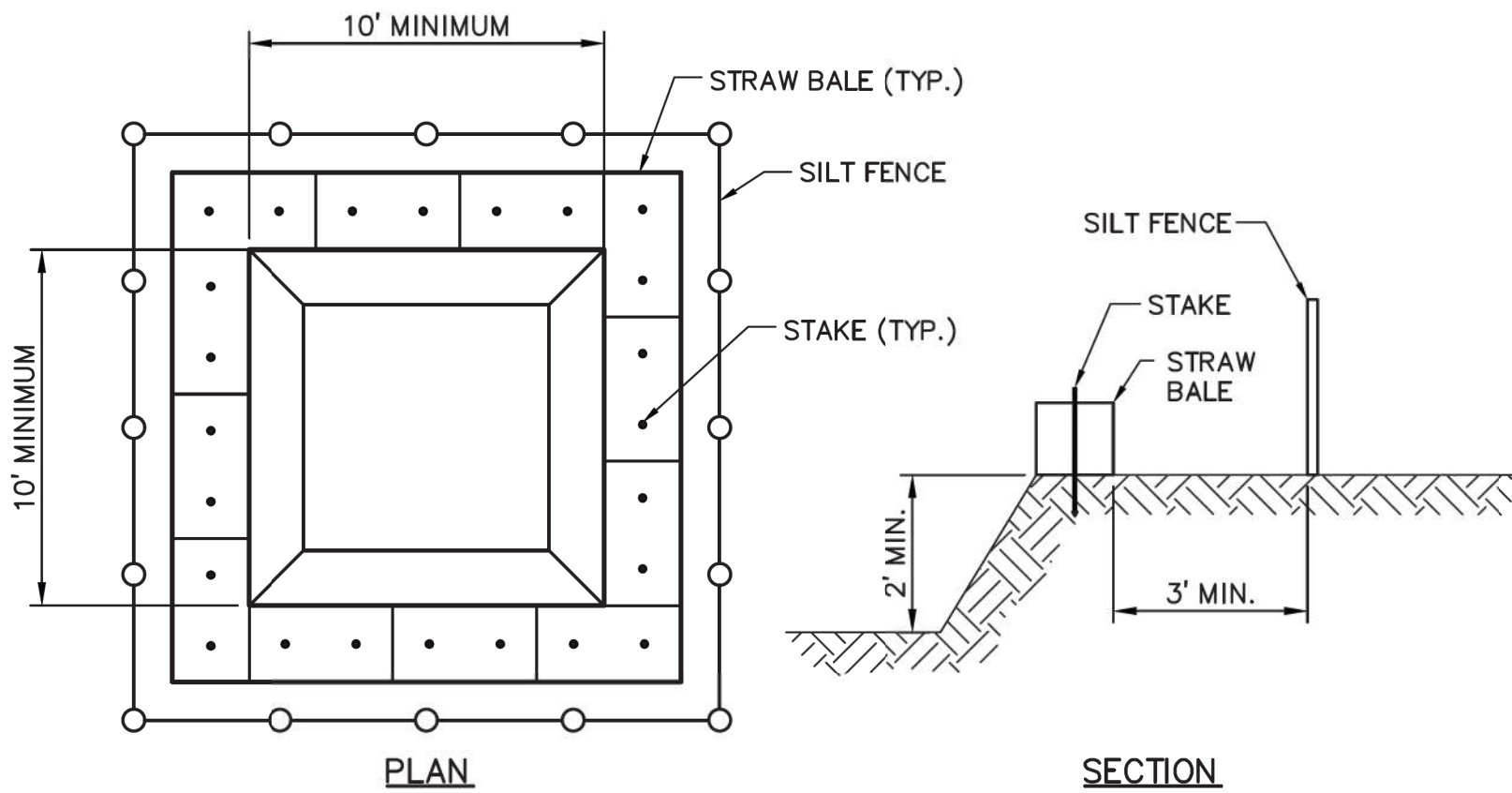
SILT FENCE INLET FILTER
(FOR CIRCULAR INLETS)
NOT TO SCALE



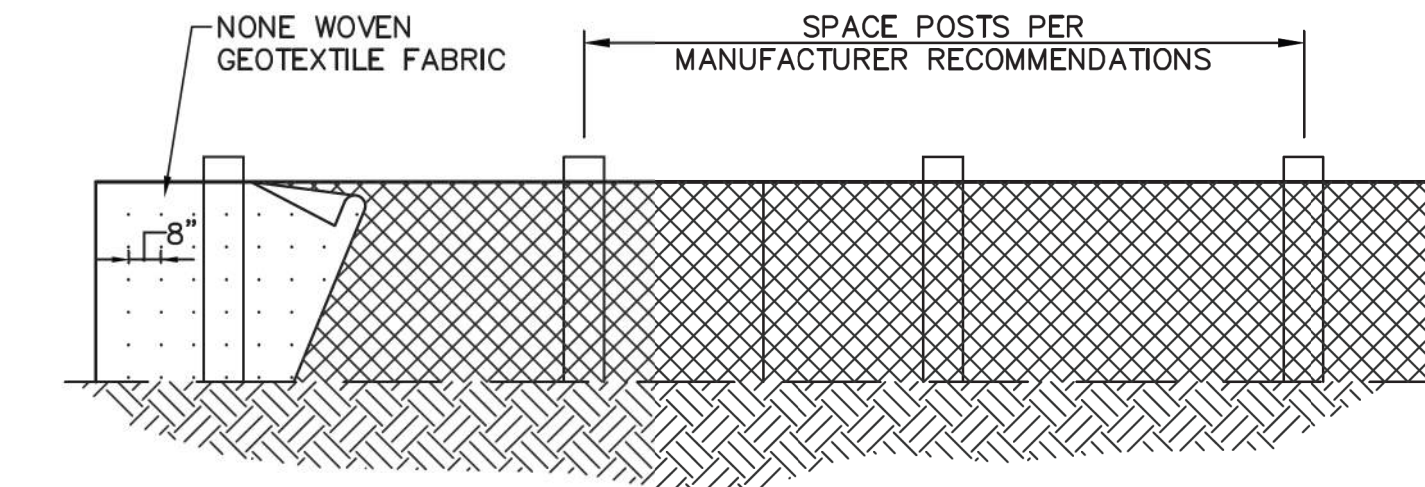
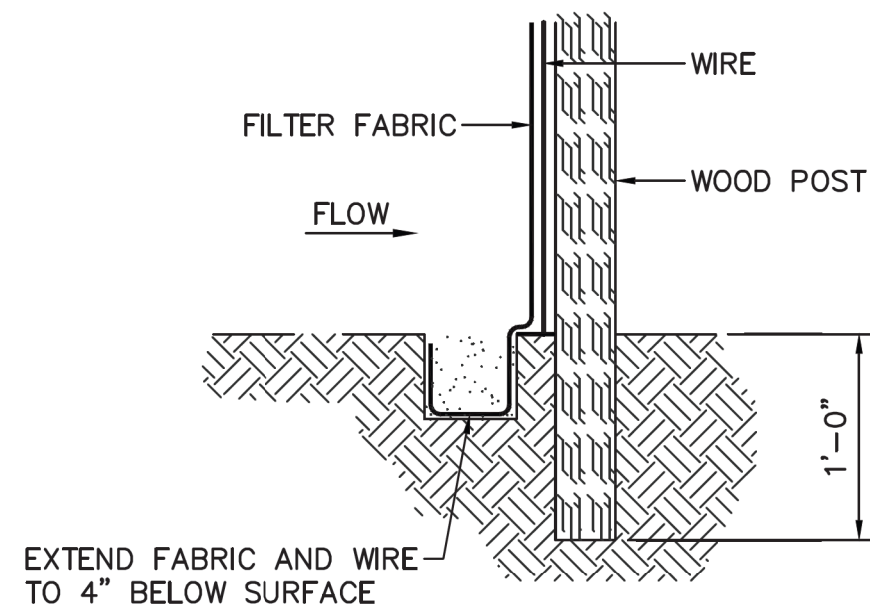
CURB BAG
(FOR CURB INLETS)
NOT TO SCALE



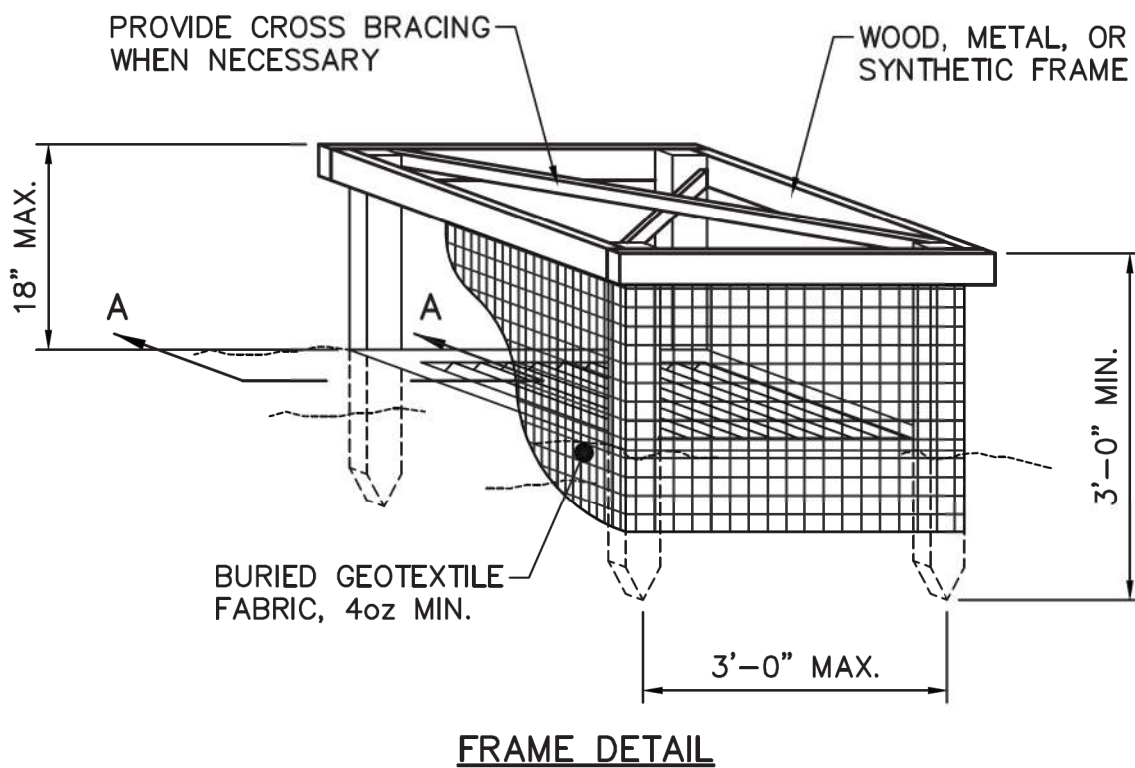
TEMPORARY GRAVEL CONSTRUCTION ENTRANCE
NOT TO SCALE



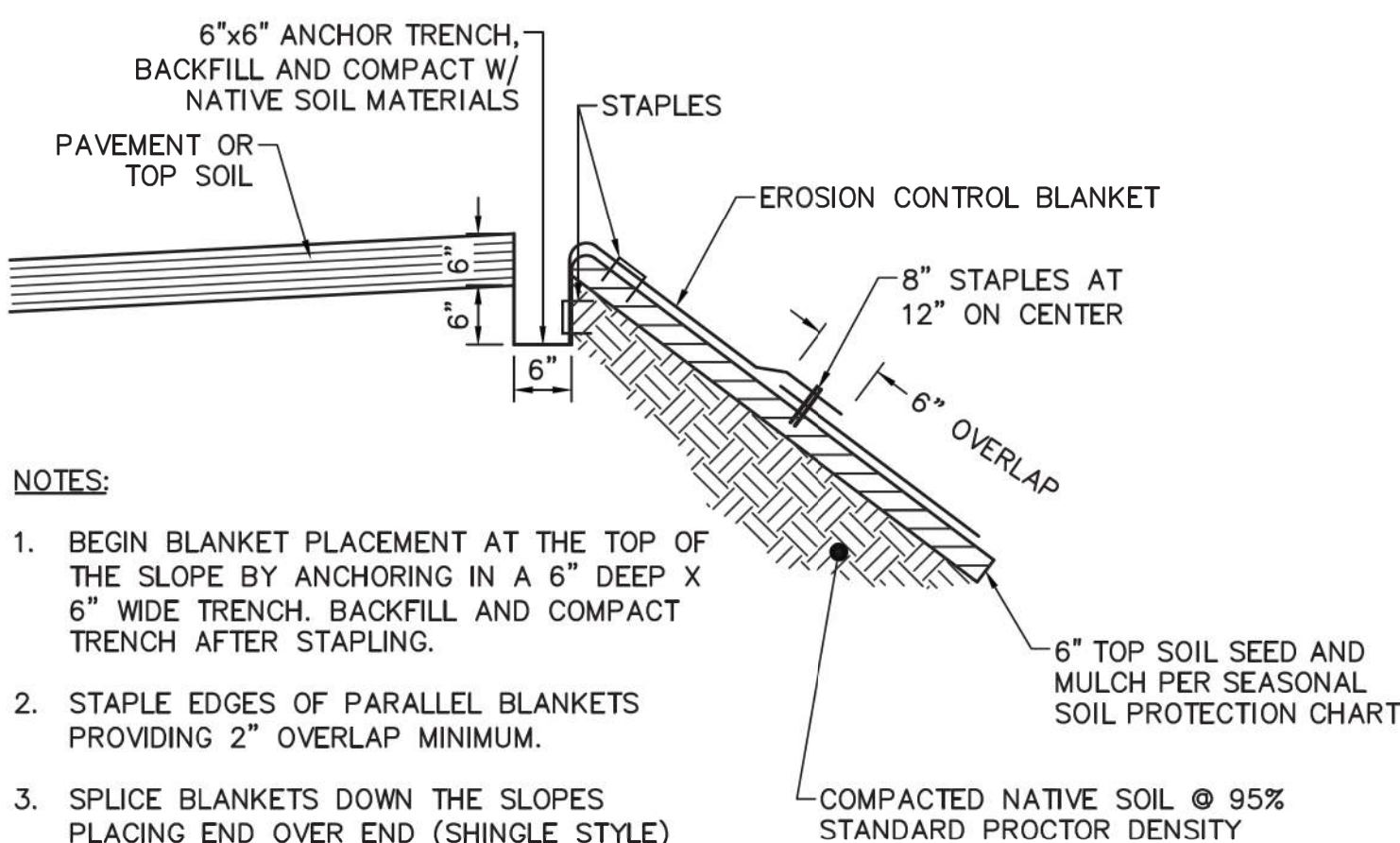
CUTTINGS CONTAINMENT BASIN
NOT TO SCALE



SILT FENCE CONSTRUCTION
NOT TO SCALE



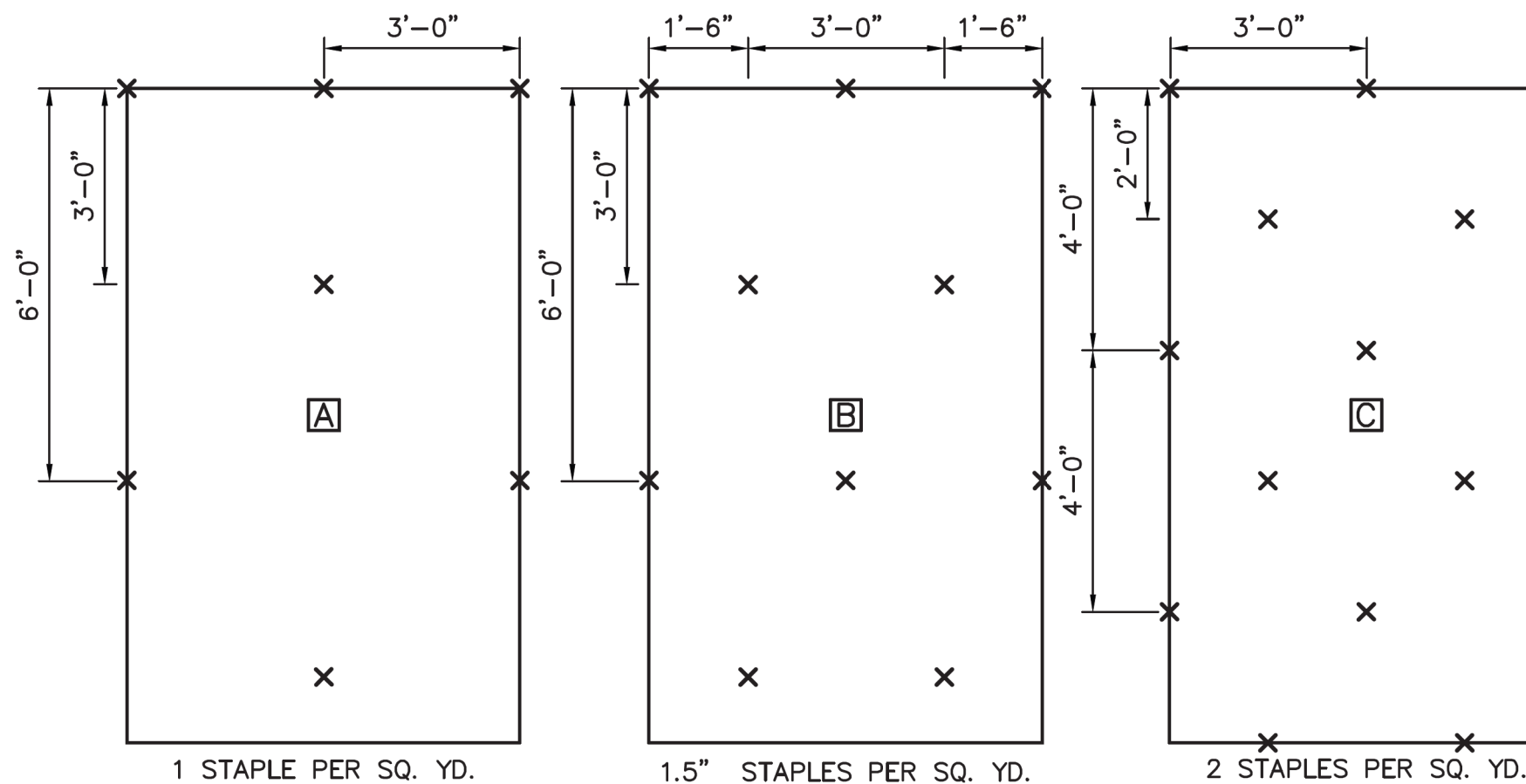
FRAME DETAIL



NOTES:

- BEGIN BLANKET PLACEMENT AT THE TOP OF THE SLOPE BY ANCHORING IN A 6" DEEP X 6" WIDE TRENCH. BACKFILL AND COMPACT TRENCH AFTER STAPLING.
- STAPLE EDGES OF PARALLEL BLANKETS PROVIDING 2" OVERLAP MINIMUM.
- SPLICE BLANKETS DOWN THE SLOPES PLACING END OVER END (SHINGLE STYLE) WITH MINIMUM OF 6" OVERLAP. STAPLE THROUGH OVERLAPPED AREA @ 12" INTERVALS.
- SEE DETAIL D-2 FOR STAPLE ANCHORAGE OF EROSION CONTROL MAT.

EROSION CONTROL BLANKET FOR SLOPE STABILIZATION
NOT TO SCALE



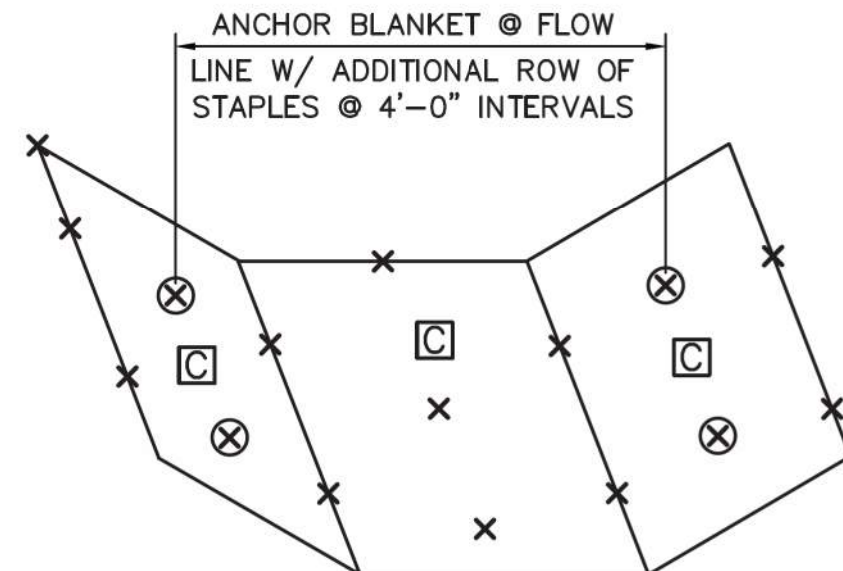
NOTES:

- CHANNEL LININGS UTILIZE STAPLE PATTERN "C" WITH ADDITIONAL STAPLES ON SIDE SLOPES AT PROJECTED WATER LINE.
- STAPLE PATTERNS APPLY TO ALL NORTH AMERICAN GREEN EROSION CONTROL BLANKETS. STAPLE PATTERNS MAY VARY DEPENDING UPON SOIL TYPE AND AVERAGE RAINFALL.
- AT SLOPE LENGTHS GREATER THAN 300 FEET OR WHERE DRAINAGE OVER LARGE AREAS IS DIRECTED ONTO THE BLANKETS, USE STAPLE PATTERN "C".

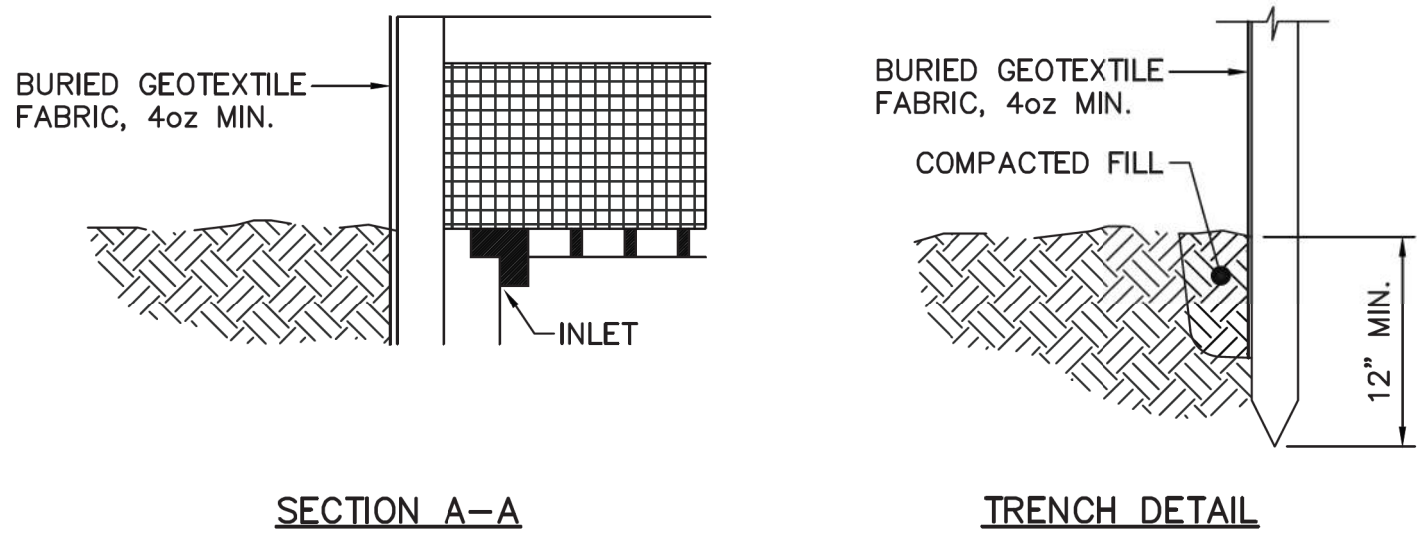
STAPLE ANCHOR REQUIREMENTS				
300	275	250	225	200
175	150	125	100	75
50	25			
SLOPE LENGTH FT.				
4:1				
3:1				
2:1				
1:1				
CHANNEL LINING				

(S-75) NORTH AMERICAN GREEN,
SINGLE NET STRAW BLANKET, OR EQUAL

(S-150) NORTH AMERICAN GREEN,
DOUBLE NET STRAW BLANKET, OR EQUAL



EROSION CONTROL MAT ANCHOR
NOT TO SCALE



SECTION A-A

TRENCH DETAIL

SILT FENCE INLET FILTER
(FOR BEEHIVE INLETS)
NOT TO SCALE



RECOMMENDED FOR APPROVAL *Kaitlyn Currie* 2/10/2023
DESIGN ENGINEER DATE

DESIGNED: CSD DRAWN: PJT
CHECKED: KMC CHECKED: CSD

CITY OF BLOOMINGTON UTILITIES

STANDARD DETAILS
EROSION CONTROL

HORIZONTAL SCALE	BRIDGE FILE
N/A	N/A
VERTICAL SCALE	DESIGNATION
N/A	N/A
SURVEY BOOK	SHEETS
N/A	12 of 13
CONTRACT	PROJECT
N/A	2021.00628

EROSION CONTROL NOTES

1. CONTRACTOR SHALL COMPLY WITH ALL STATE AND LOCAL ORDINANCES THAT APPLY.
2. THIS PLAN SHALL NOT BE CONSIDERED ALL INCLUSIVE AS THE CONTRACTOR SHALL TAKE ALL NECESSARY PRECAUTIONS TO PREVENT SEDIMENT FROM LEAVING THE SITE.
3. ADDITIONAL EROSION AND SEDIMENT CONTROL MEASURES SHALL BE INSTALLED IF DEEMED NECESSARY BY ON SITE INSPECTION BY THE LOCAL REVIEWING AUTHORITY.
4. WASTES AND UNUSED BUILDING MATERIALS SHALL NOT BE ALLOWED TO BE CARRIED FROM THE SITE BY STORM WATER RUNOFF. PROPER DISPOSAL OF ALL WASTES AND UNUSED BUILDING MATERIALS IS REQUIRED.
5. SEDIMENT BEING TRACKED ONTO PUBLIC OR PRIVATE ROADWAYS SHALL BE MINIMIZED. CLEARED SEDIMENT SHALL BE RETURNED TO THE SITE FOR DISPOSAL.
6. EXISTING VEGETATION SHALL BE PRESERVED IN AREAS NOT DISTURBED BY CONSTRUCTION ACTIVITY.
7. IF SOIL STOCKPILES WILL BE LEFT FOR A PERIOD LONGER THAN FIFTEEN (15) DAYS, THEY SHALL BE STABILIZED WITH TEMPORARY SEED MIX AND SURROUNDED BY SILT FENCE.
8. ALL APPLICABLE EROSION CONTROL MEASURES SHALL BE PLACED BEFORE ANY LAND DISTURBING ACTIVITIES.
9. UNVEGETATED AREAS THAT ARE SCHEDULED OR LIKELY TO BE LEFT INACTIVE FOR FIFTEEN (15) DAYS OR MORE MUST BE TEMPORARILY OR PERMANENTLY SEEDED. ALTERNATIVE STABILIZATION METHODS ARE ACCEPTABLE IF THEY ARE ADEQUATE TO PREVENT SEDIMENT DISCHARGE.
10. ANY DEWATERING ACTIVITIES SHALL BE PERFORMED IN A MANNER THAT WILL NOT DISCHARGE SEDIMENT LADEN WATER INTO A STREAM OR STORMWATER INLET. SEDIMENT LADEN WATER SHALL BE FILTERED THROUGH A PUMP DISCHARGE FILTER DEVICE SUCH AS A PUMP DISCHARGE BAG. PUMP DISCHARGE SHALL BE PLACED IN AN AREA THAT WILL NOT CAUSE EROSION AT THE OUTLET.
11. THE CONTRACTOR SHALL ENSURE THAT ALL APPLICABLE EROSION AND SEDIMENT CONTROL MEASURES ARE IN PLACE AT THE APPROPRIATE PHASES OF CONSTRUCTION.
12. IF CONTRACTOR WORKS OUTSIDE THE ESTABLISHED CONSTRUCTION LIMITS, SILT FENCE MAY BE REQUIRED. CONTRACTOR IS RESPONSIBLE FOR ANY WORK OUTSIDE THE CONSTRUCTION LIMITS AT NO COST TO THE OWNER.
13. THE CONTRACTOR SHALL DEVELOP A SELF-MONITORING PROGRAM TO ENSURE PROPER MAINTENANCE AND FUNCTION OF STORM WATER QUALITY MEASURES. A WRITTEN EVALUATION SHOULD BE PERFORMED BY THE END OF THE NEXT BUSINESS DAY AFTER EACH MEASURABLE STORM EVENT, AND AT A MINIMUM OF ONE (1) TIME PER WEEK. WRITTEN EVALUATION SHALL INCLUDE THE NAME OF THE INDIVIDUAL PERFORMING THE EVALUATION, DATE OF THE EVALUATION, PROBLEMS IDENTIFIED AT THE SITE, AND DETAILS OF CORRECTIVE ACTIONS RECOMMENDED AND COMPLETED. MONITORING SHOULD BE PERFORMED BY AN INDIVIDUAL TRAINED IN EROSION AND SEDIMENT CONTROL PRACTICES.

MATERIAL HANDLING AND SPILL PREVENTION PLAN

MATERIALS PRESENT ON-SITE THAT MAY BE POTENTIALLY HAZARDOUS WILL INCLUDE WASTES, EXCESS BUILDING MATERIALS, AND FUELS AND LUBRICANTS REQUIRED FOR CONSTRUCTION EQUIPMENT. THESE ITEMS SHALL NOT BE ALLOWED TO BE CARRIED FROM THE SITE BY STORM WATER RUNOFF. THE CONTRACTOR SHALL DISPOSE OF ALL EXCESS BUILDING MATERIALS AND CONTAINERS AT AN OFF-SITE LOCATION. CONSTRUCTION VEHICLES SHALL BE SERVICED IN AREAS THAT WILL MINIMIZE IMPACTS IN THE OCCURRENCE OF A SPILL OR LEAK. SHOULD A SPILL OCCUR, THE CONTRACTOR SHALL MAKE ALL EFFORTS TO CONTAIN AND CLEAN THE SPILL, AND EXPOSE OF CONTAMINATED MATERIALS/SOIL IN AN APPROVED MANNER. ALL SPILLS SHOULD BE REPORTED TO THE INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT'S EMERGENCY RESPONSE HOT LINE AT 1-888-233-7745.

MAINTENANCE REQUIREMENTS FOR EROSION CONTROL MEASURES

SILT FENCE MAINTENANCE REQUIREMENTS

1. INSPECT THE SILT FENCE PERIODICALLY AND AFTER EACH STORM EVENT.
2. IF FABRIC TEARS, STARTS TO DECOMPOSE, OR IN ANY WAY BECOMES INEFFECTIVE, REPLACE THE AFFECTED PORTION IMMEDIATELY.
3. REMOVE DEPOSITED SEDIMENT WHEN IT REACHES HALF THE HEIGHT OF THE FENCE AT ITS LOWEST POINT OR IS CAUSING THE FABRIC TO BULGE.
4. TAKE CARE TO AVOID UNDERMINING THE FENCE DURING CLEAN OUT.
5. AFTER THE CONTRIBUTING DRAINAGE AREA HAS BEEN STABILIZED REMOVE THE FENCE AND SEDIMENT DEPOSITS, BRING THE DISTURBED AREA TO GRADE, AND STABILIZE.

EROSION CONTROL BLANKET (SURFACE APPLIED) MAINTENANCE REQUIREMENTS

1. DURING VEGETATIVE ESTABLISHMENT INSPECT AFTER STORM EVENTS FOR ANY EROSION BELOW THE BLANKET.
2. IF ANY AREA SHOWS EROSION PULL BACK THAT PORTION OF THE BLANKET COVERING IT, ADD SOIL, RE-SEED THE AREA, AND RE-LAY AND STAPLE THE BLANKET.
3. AFTER VEGETATIVE ESTABLISHMENT CHECK THE TREATED AREA PERIODICALLY.

DRILLING PROCEDURES

THE SITE SUPERVISOR SHALL BE ON-SITE AT ANY TIME THAT DRILLING IS OCCURRING OR IS PLANNED TO OCCUR. DRILLING PRESSURES SHALL BE CLOSELY MONITORED SO THEY DO NOT EXCEED THOSE NEEDED TO PENETRATE THE FORMATION. PRESSURE LEVELS SHALL BE MONITORED RANDOMLY BY THE OPERATOR.

EXIT AND ENTRY PITS SHALL BE ENCLOSED BY SILT FENCES AND STRAW. A VACUUM TRUCK SHALL BE READILY AVAILABLE ON-SITE PRIOR TO AND DURING ALL DRILLING OPERATIONS. CONTAINMENT MATERIALS (STRAW, SILT FENCING, SAND BAGS, FRAC-OUT SPILL KITS, ETC.) SHALL BE STAGED ON-SITE AT LOCATIONS WHERE THEY ARE READILY AVAILABLE AND EASILY MOBILIZED FOR IMMEDIATE USE IN THE EVENT OF AN ACCIDENTAL RELEASE OF DRILLING MUD (FRAC-OUT). IF NECESSARY, BARRIERS (STRAW BALES OR SEDIMENTATION FENCES) BETWEEN THE BORE SITE AND THE EDGE OF THE WATER SOURCE SHALL BE CONSTRUCTED, PRIOR TO DRILLING, TO PREVENT RELEASED BENTONITE MATERIAL FROM REACHING THE WATER.

ONCE DRILLING BEGINS, THE DRILL OPERATOR SHALL STOP WORK WHENEVER THE PRESSURE IN THE DRILL RIG DROPS OR THERE IS A LACK OF RETURNS IN THE ENTRANCE PIT. AT THIS TIME THE SITE SUPERVISOR SHALL BE INFORMED OF THE POTENTIAL FRAC-OUT. THE SITE SUPERVISOR AND THE DRILL RIG OPERATOR(S) SHALL WORK TO IDENTIFY THE LIKELY LOCATION OF THE FRAC-OUT. THE LOCATION OF THE FRAC-OUT SHALL BE RECORDED AND NOTES MADE ON THE LOCATION AND MEASURES TAKEN TO ADDRESS THE CONCERN.

MULCHING

MULCH SPECIFICATIONS		
MATERIAL	RATE PER ACRE	COMMENTS
STRAW OR HAY	2 TONS	SHOULD BE DRY, FREE OF UNDESIREABLE SEED. SPREAD BY HAND OR MACHINE. MUST BE CRIMPED OR ANCHORED (SEE TABLE 2)
WOOD FIBER OR CELLULOSE	1 TON	APPLY WITH A HYDRAULIC MULCH MACHINE AND USE TACKING AGENT.

MULCH ANCHORING METHODS	
ANCHORING METHOD	HOW TO APPLY
MULCH ANCHORING TOOL OR FARM DISK (DULL, SERRATED, AND BLADES SET STRAIGHT)	CRIM OR PUNCH THE STRAW OR HAW TWO TO FOUR INCHES INTO THE SOIL. OPERATE MACHINERY ON THE CONTOUR OF THE SLOPE.
CLEATING WITH DOZER TRACKS	OPERATE THE SOZER UP AND DOWN SLOPE TO PREVENT FORMATION OF RILLS BY DOZER CLEATS.
WOOD HYDROMULCH FIBERS	APPLY ACCORDING TO MANUFACTURER'S RECOMMENDATIONS.
SYNTHETIC TACKIFIERS, BINDERS, OR SOIL STABILIZERS	APPLY ACCORDING TO MANUFACTURER'S RECOMMENDATIONS.
NETTING (SYNTHETIC OR BIODEGRADABLE MATERIAL)	INSTALL NETTING IMMEDIATELY AFTER APPLYING MULCH. ANCHOR NETTING WITH STAPLES. EDGES OF NETTING STRIP SHOULD OVERLAP WITH EACH UP-SLOPE STRIP OVERLAPPING FOUR TO SIX INCHES OVER THE ADJACENT DOWN-SLOPE STRIP. BEST SUITED TO SLOPE APPLICATIONS. IN MOST INSTANCES, INSTALLATION DETAILS ARE SITE SPECIFIC, SO SITE MANUFACTURER'S RECOMMENDATIONS SHOULD BE FOLLOWED.

MULCHING NOTES

1. SPREAD THE MULCH MATERIAL UNIFORMLY BY HAND, HAYFORK, MULCH BLOWER, OR HYDRAULIC MULCH MACHINE. AFTER SPREADING, NO MORE THAN 25 PERCENT OF THE GROUND SHOULD BE VISIBLE.
2. ANCHOR STRAW OR HAY MULCH IMMEDIATELY AFTER APPLICATION

MAINTENANCE

1. INSPECT WITHIN 24 HOURS OF EACH RAIN EVENT AND AT LEAST ONCE EVERY SEVEN CALENDAR DAYS.
2. CHECK FOR EROSION OR MOVEMENT OF MULCH; REPAIR DAMAGED AREAS, RESEED, APPLY NEW MULCH AND ANCHOR THE MULCH IN PLACE.
3. CONTINUE INSPECTIONS UNTIL VEGETATION IS FIRMLY ESTABLISHED.
4. IF EROSION IS SEVERE OR RECURRING, USE EROSION CONTROL BLANKETS OR OTHER MORE SUBSTANTIAL STABILIZATION METHODS TO PROTECT THE AREA.

SEASONAL SOIL PROTECTION CHART

STABILIZATION PRACTICE	JAN.	FEB.	MAR.	APR.	MAY	JUNE	JULY	AUG.	SEPT.	OCT.	NOV.	DEC.
PERMANENT SEEDING SUN TO PARTIAL SHADE			A		* /// // // // // // *			* / / -				
PERMANENT SEEDING PARTIAL SHADE TO SHADE			B		* /// // // // // // *			* / / -				
PERMANENT SEEDING NON-IRRIGATED AREAS			C		* /// // // // // // *			* / / -				
TEMPORARY SEEDING			D	F		* / // // // // // *	E					
MULCHING	G											

A = PERMANENT SEEDING – SUN TO PARTIAL SHADE KENTUCKY BLUEGRASS 175 LBS./ACRE; CREEPING RED FESCUE 70 LBS./ACRE; FINE TEXTURED RYE (PERENNIAL) 105 LBS./ACRE PLUS 2 TONS STRAW MULCH/ACRE, OR ADD ANNUAL RYE GRASS 20 LBS./ACRE

B = PERMANENT SEEDING – PARTIAL SHADE TO SHADE KENTUCKY BLUEGRASS 35 LBS./ACRE; CREEPING RED FESCUE 210 LBS./ACRE; FINE TEXTURED RYE (PERENNIAL) 105 LBS./ACRE PLUS 2 TONS STRAW MULCH/ACRE, OR ADD ANNUAL RYE GRASS 20 LBS./ACRE

C = PERMANENT SEEDING – NON-IRRIGATED AREAS KENTUCKY BLUEGRASS 87 LBS./ACRE; CREEPING RED FESCUE 70 LBS./ACRE; FINE TEXTURED RYE (PERENNIAL) 193 LBS./ACRE PLUS 2 TONS STRAW MULCH/ACRE, OR ADD ANNUAL RYE GRASS 20 LBS./ACRE

D = SPRING OATS 3 BUSHEL/ACRE

E = WHEAT OR RYE 2 BUSHEL/ACRE

F = ANNUAL RYE GRASS 40 LBS./ACRE (1 LB/1000 SQ. FT.)

G = STRAW MULCH 2 TONS/ACRE. ANCHOR WITH ASPHALT EMULSION AT A RATE OF 300/GAL. PER ACRE FOR SLOPES GREATER THAN 4:1 USE EROSION CONTROL BLANKET ACCEPTABLE TO LOCAL AUTHORITIES.

* / / * = IRRIGATION NEEDED DURING JUNE, JULY, AUGUST AND/OR SEPTEMBER

NOTE:

CONTRACTOR IS RESPONSIBLE FOR PROVIDING TEMPORARY SEEDING TO CONTROL EROSION AS REQUIRED BY INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT.



RECOMMENDED FOR APPROVAL *Kaitlyn Currie* 2/10/2023
DESIGN ENGINEER DATE

DESIGNED: _____ CSD DRAWN: _____ PJT
CHECKED: _____ KMC CHECKED: _____ CSD

CITY OF BLOOMINGTON UTILITIES

STANDARD DETAILS
EROSION CONTROL

HORIZONTAL SCALE	BRIDGE FILE
N/A	N/A
VERTICAL SCALE	DESIGNATION
N/A	N/A
SURVEY BOOK	SHEETS
N/A	13 of 13
CONTRACT	PROJECT
N/A	2021.00628